INCREASING TRANSPORTATION ACCESS IN CUMBERLAND COUNTY, NC THROUGH AN ACCOUNTABLE CARE COMMUNITY TO IMPROVE THE HEALTH OF LOW-INCOME URBAN AND RURAL RESIDENTS

By

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A Capstone Project submitted to the faculty of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Public Health in the Gillings School of Global Public Health.

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ABSTRACT

Makala Carrington, Anna Fisher, Mikayla Kuykendall, Casey Shubrook, Steven W. Yates, Doctor of Medicine: INCREASING TRANSPORTATION ACCESS IN CUMBERLAND COUNTY, NC THROUGH AN ACCOUNTABLE CARE COMMUNITY TO IMPROVE THE HEALTH OF LOW-INCOME URBAN AND RURAL RESIDENTS
(Under the direction of Seema Agrawal, Nancy McGee, Vaughn Upshaw)

The Cumberland County Mobile Food Market (MFM) will be an Accountable Care Community (ACC) that focuses on increasing transportation access for low-income urban and rural residents in Cumberland County (CC). The MFM is an efficient and cost-effective strategy to distribute healthy, affordable food directly to residents in CC. The proposed program includes several innovative components that acknowledge the key issues of food insecurity and address lack of access to foods for residents of CC as a result of transportation limitations. This ACC will partner with the Cumberland County Department of Social Services (CCDSS) as the backbone organization for the MFM. Implementing the MFM will improve transportation access within Cumberland and has the potential to improve healthy food access and reduce rates of food insecurity within low-income urban and rural communities.

Keywords: Accountable Care Community, North Carolina, Cumberland County, Fayetteville, social determinants of health, food insecurity, transportation access, poverty, health, urban, rural.

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LIST OF ABBREVIATIONS

ACC	Accountable Care Community
CC	Cumberland County
CCPHD	Cumberland County Public Health Department
CCDSS	Cumberland County Department of Social Services
CCPS	Cumberland County Public Schools
CHA	Community Health Assessment
HD	Health Department
MFM	Mobile Food Market
MOU	Memorandum of Understanding
NC	North Carolina
NCPC	North Carolina Partnership for Children
ROI	Return on Investment
SDOH	Social Determinants of Health
SNAP	Supplemental Nutrition Assistance Program
SES	Socioeconomic Status
US	United States
WIC	Special Supplemental Nutrition Program for Women, Infants and Children

COMMON PROPOSAL

ACC Project Aims and Goals

The CC MFM will be an ACC that focuses on disadvantaged, food insecure, populations in CC. Food insecure populations mostly reside in geographic areas with a high representation of minorities living in poverty, particularly in urban and rural settings. These neighborhoods lack access to quality food and are surrounded by fast food outlets and convenience stores marketing nutritionally inadequate foods (also known as food swamps) or lack food outlets altogether (food deserts) (Dutko et al., 2012). Furthermore, transportation barriers limit access to healthy foods. This project will address the social determinant of transportation access by streamlining quality food options directly to community residents.

The aim of the ACC is to invite critical stakeholders to form a MFM to deliver sufficient and nutritious food items to high-need communities. The initial goal will focus on improving food access for individuals who lack access to quality foods due to transportation limitations. Coupled with this initiative will be the incorporation of educational activities on lifestyle and nutrition as well as identifying individuals in need of Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and Supplemental Nutrition Assistance Program (SNAP) benefits. These short-term goals will improve diet quality for disadvantaged residents.

Long-term goals for the Mobile Market will focus on improving economic opportunities for disadvantaged residents. By partnering with other stakeholders, such as the Pathways for Prosperity Coalition, educational services, and social support can be introduced to promote overall health and well-being. The Mobile Market will serve as a vehicle to facilitate the enrollment and delivery of education and social services to enhance residents' access to both food and food assistance programs to reduce food insecurity and achieve a better quality of life.

Ultimately, this program aims to increase overall health outcomes influenced by the built environment, specifically insufficient transportation infrastructure.

Proposed Innovation/Transformation

The MFM Program is an efficient and cost-effective strategy to distribute healthy, affordable food directly to residents in CC. The MFM concept is not novel to North Carolina, as several other counties, including Greensboro, Pender, and Wake, have implemented similar programs. Examples of these programs include the Out of the Garden Project Fresh Mobile Market in Greensboro County, Inter-Faith Food shuttle in Wake County, and Local Motive Mobile Farmers' Market in Pender County. These programs differ in participation, eligibility requirements, frequency of market events, market locations, and types of foods distributed. However, they all demonstrate the success of food distribution programs in improving food security in communities experiencing transportation access issues with demographic and geographic similarities throughout North Carolina.

Our proposed program includes several components that are innovative, acknowledge the key issues of food insecurity, and address lack of access to foods for residents of CC as a result of transportation limitations. Key components include a strong partnership with the CCDSS to help build up the customer base and buy-in of our program. This partnership will also help establish the MFM as a sign-up site for WIC and SNAP benefits. The proposed MFM will operate as a business and purchase products from local growers and businesses, unlike other MFM programs that rely solely on donations. The revenue generated from MFM sales will be utilized to ensure the sustainability of the program. Our program will supply more than just fresh produce. The MFM will also provide WIC-authorized foods, such as milk, eggs, cheese and will accept both WIC and SNAP electronic benefits transfer (EBT) payments. We hope that by

providing more than just produce, the MFM will serve as a one-stop-shop for community member customers.

Potential Public Health Impact

The challenge facing CC is the high rate of food insecurity and limited access to healthy and sufficient food options. Consequently, one in every five residents living in CC are food insecure. This number is even higher among children living in food insecure homes (32.3%) (North Carolina State Center for Health Statistics, 2019). The county does have some infrastructure to address these problems such as free and reduced-price meals in schools, SNAP, and WIC. However, despite these current resources, the county is still facing widespread challenges to sufficient nutrition, majorly as a result of inadequate transportation.

Successful implementation of the MFM Program project aims will result in a significant county-wide reduction in food insecurity. The MFM Program's objectives include (1) reaching 75% of identified food swamp neighborhoods and (2) reducing food insecurity among those below 200% FPL by 20% within one year from the start of full operations. The MFM has the potential to close disparity gaps between socioeconomic status (SES) groups and racial and ethnic groups as well. The program is structured so that the MFM will visit neighborhoods that have the most need, which will likely be areas of lower SES. The MFM will also be required to have SNAP and WIC applications on site to support the promotion of underutilized social service programs and help connect community members to available support resources. Upon successful implementation, we will collect data and perform program evaluations to reflect progress surrounding gaps in areas affected by food insecurity. Ultimately, this program will serve as a pilot program for larger-scale implementations in neighboring counties and at the state level.

Potential challenges include resistance from those who live in the neighborhoods we visit

that may be concerned with increased traffic or noise to the area. To address this, we will first survey community members to assess where the most need and interests lie and create a schedule for the MFM that will be available to all residents. This will minimize issues related to unexpected noise and traffic as well as ensure that the Market is meeting those most interested. Further, it will be important to ensure all zoning policies are followed. Having the political support of Mayor Mitch Colvin will expedite the process of obtaining the necessary permits for the MFM as well as meeting County-specific regulations.

Outcomes, Milestones, and Deliverables

The MFM will define success based on short-term, intermediate, and long-term impacts. Short-term impacts will be assessed within 1-3 years, intermediate impacts within 4-6 years, and long-term impacts within 7-9 years. Short-term success will include participation in the MFM, increased utilization of SNAP and WIC benefits within MFM participants, and increased purchase of fruits, vegetables, and whole grains as determined by weekly evaluations of point-of-sales system data. Intermediate success will primarily consist of improved attitudes regarding the local food environment and decreased perception of transportation barriers, as measured by self-reported qualitative data via bi-annual surveys and focus groups (generated and distributed using REDCap survey systems). Lastly, long-term success will include reduced food insecurity and increased awareness of transportation infrastructure inadequacies on a policy level.

Measures of food security will be determined through self-reports via REDCap surveys, and hospitalization data will be obtained from local medical data. Both long-term impacts will be evaluated every two years. These measures and outcomes will be presented to stakeholders via annual strategic plans starting at baseline with overall program goals and plans. Additionally,

forging partnerships, establishing an MOU with CCDSS, identifying target neighborhoods, conducting follow-up evaluation surveys will all serve as process outcomes.

The success of the MFM will depend heavily on its sustainability. Thus, sustainability will be ensured through maintained stakeholder engagement and community partnerships throughout the program in addition to annually renewed MOU between the MFM and at least one grocer, Feeding the Carolinas, local farmers, and CCDSS. These approaches will ensure a consistent food supply to the market and assist with increasing food assistance enrollment and utilization of benefits. As a result of participation and profits, return on investment to food suppliers will likely occur within the first 2-3 years. Additionally, CC will see a return on investment (ROI) within 7-10 years as food security increases, preventable hospitalizations decrease, missed days of work are reduced, and quality of life improves among low-income urban and rural residents.

ACC Team

Partners for this ACC include the Pathways for Prosperity Coalition, Kingdom Impact Global Ministries, CCDSS, CCDPH School Health Program, Food Lion, Walmart, Local Farmers Market at Downtown Fayetteville, Cumberland County Public Schools (CCPS) Child Nutrition Director, and Yaya Food Mart Manager. See Table 1 in Appendix A for more detailed information on the roles of these stakeholders.

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APPENDIX A: GROUP DELIVERABLES

Common Proposal Figures and Tables

Figure 1: Rich Picture of the Lack of Food Transportation Access in Fayetteville, NC

Table 1. RASCI Stakeholder Matrix for Program Intervention

RASCI Levels		
Who is ...	Program Transformation	Rationale for Partner Participation
Responsible = owns the problem/project	Cumberland County Department of Social Services	Opportunity to dialogue and partner with other stakeholders. Support for the organization's mission by developing long-term solutions. Help provide services comprehensive to the physical and social services to improve health and quality of life for Cumberland County residents.
Accountable = ultimately answerable for the correct and thorough completion of the deliverable or task, and the one who delegates the work to those responsible	Food Lion Walmart Cumberland County Public Health Department School Health Program Cumberland County Department of Social Services Local Farmers Market at Downtown Fayetteville	Farmers experience as local growers in the community and innovate ways to build partnerships as vendors for the Mobile Market. Insight on grocery store challenges and provide access and expansion via our Mobile Market program.
Supportive = can provide resources or can play a supporting role in implementation	Pathways for Prosperity Coalition ● Action Pathways Inc. ● Alpha Kappa Alpha ● Boys & Girls Club of Cumberland County ● Carolina Collaborative Community Care (4C)	Insights into the system and how to overcome barriers. Lived experiences surrounding food access.

	• Center for Economic Empowerment and Development • Communities in Schools of Cumberland County • Community Interagency Council--Quality Education (CICQuE) • Cumberland Community Foundation • Delta Sigma Theta • Fayetteville Area Habitat for Humanity • Fayetteville Cumberland Re-Entry Council • Fayetteville Metropolitan Housing Authority • Fayetteville PACT • Fayetteville Rotary Club • Fayetteville State University • Fayetteville Technical Community College • Fayetteville/CC Economic Development Corporation • Giving Hands Association • Greater Fayetteville Chamber of Commerce • Greater Fayetteville United • Kingdom Community Development Corporation • Latino Community Connections • Latinos United for Progress • Methodist University • NAACP—Fayetteville Branch • North Carolina Justice Center • Partnership for Children of Cumberland County • Sustainable Sandhills • United Way of Cumberland County Kingdom Impact Global Ministries Cumberland County Public Schools Child Nutrition Director	Potential for addressing some of the barriers the community is currently experiencing and gaps for potential solutions. Insight on the needs of community members as the heart of eastern Fayetteville and safe haven for a high volume of minority residents in Cumberland County.

	Yaya Food Mart Manager	
Consulted = has information and/or capability necessary to complete the work	Cumberland County Public Schools Child Nutrition Director	Provision of quality meals through quality services to our customers in the schools in this district. Help in supporting the children who are most at risk and in need based on collaboration with the school system.
Informed = must be notified of results, process, and methods, but need not be consulted	Cumberland County Public Schools Child Nutrition Director Pathways for Prosperity Coalition	Another partner (us) to aid in reaching a large range of communities. Additional support and resources, a chance to make an impactful difference that has already been started by local leaders.

All in the Neighborhood SPHG 992 Team Charter

Objective:

The purpose of All in the Neighborhood is to create a proposal for an Accountable Care Community (ACC) for Cumberland County, NC that focuses on the neighborhood and physical environment as a social determinant of health. During this process, we will learn how to integrate our different concentrations in order to create an all-encompassing approach to creating and implementing the ACC.

Goals/Values:

The team will be successful when we are all able to contribute and advance our ideas and skills in development of the Accountable Care Community (ACC) for Cumberland County, NC. We will be sensitive to everyone's values and goals in this project.

Team Strengths:

- Casey: Comfortable editing and proofreading documents; experience addressing nutrition and setting nutrition-related goals in at risk populations (type 2 diabetes and pre-diabetes)
- Steven: I come with over 30 years of medical experience. Much of that is helping build programs with community stakeholders. My skills are organizational and relationship building. Personal contributions will be my team participation, writing and editing.
- Anna: Experience in evaluating health environments through NEMS surveys, grant writing, public health nutrition program management and evaluation.
- Mikayla: Editing/proofreading, connecting various social determinants to nutrition-related issues, food environment assessments

- Makala: research (qualitative, quantitative), data abstraction, collection, interpretation/analysis, creativity (designing, planning, organizing), professionalism (punctuality, meeting deadlines, accountability)

Topic:

Social Determinants of Health: Neighborhood and Physical Environment

Deliverables:

Week 3

- Group: Team Charter - due before class
- Individual: Outline of Problem Statement - due before class

Week 4

- Individual: Draft Problem Statement - due before class
- Individual: Problem Statement - due Sunday January 31st at 11:55 PM

Week 5

- Individual Assignments - due Tuesday February 9th at 11:55 PM
- Leadership: Outline evidence-based options for transforming the SDOH in the community
- Nutrition: Outline evidence-based nutrition options for transforming the SDOH in the community
- Health Policy: Outline policy analysis

Week 6

- As a group, decide which program and policy the group will use to develop proposal from outlines (specific details will vary by group composition)

Week 7

- Individual Assignment - due before class and bring to class (bring to class)
    - Leadership: Draft stakeholder analysis
    - Nutrition: Draft nutrition program/policy proposal
    - Health Policy: Draft policy analysis

Week 8

- Individual Assignment - due Sunday February 28th by 11:55 PM
    - Leadership: Final Stakeholder Analysis
    - Nutrition: Final Nutrition Program Analysis
    - Health Policy: Final Policy Analysis

Week 9

- Individual Assignment - bring to class
    - Leadership: Draft Engagement Plan
    - Nutrition: Draft Evaluation Plan
    - Health Policy: Draft Budget and Budget Narrative

Week 10

- Individual Assignment - due Sunday March 14th by 11:55 PM
    - Leadership: Final Engagement Plan
    - Nutrition: Final Evaluation Plan
    - Health Policy: Final Budget and Budget Narrative

Week 11

- Group Assignment - due Sunday March 21st by 11:55 PM
    - Title Page
    - Copyright Page

    - Abstract (150 words)
    - Table of Contents
    - Group Proposal
    - References
    - Appendices

Week 12

- Group/Individual Assignment - due Tuesday March 23rd by 11:55 PM
    - Full packet with individual appendices
    - Draft presentation

Week 13

- Group Presentation in class
- Individual Final Assignment
    - Submit signed title page to Academic Coordinator by 4PM (EST) on April 14, 2021 Upload full packet to CDR by 4PM (EST) on April 21, 2021

Milestones:

We will track our progress by successfully meeting each week as well as completing all assignments and submitting them on time. We will each upload our individual assignments to our group Google Drive to ensure coordination of our products as well and provide each other with feedback. Additionally, meeting agendas and minutes will guide us in meeting discussions and allow us to determine what work needs to be completed and when.

Roles/Responsibilities:

- Submitting assignments: Makala
- Setting/sending out agenda: Steve

- Note taking/sending out minutes: Anna
- Team liaison: Casey and Steve
- Proofreader(s): Mikayla (ALL)

Expectations:

- Preferred names: Casey, Mikayla, Anna, Makala, Steve
- Group norms: Being flexible; open communication; advance notice of scheduling conflicts
- Means of providing and receiving feedback: Comments on shared Google documents and group meeting discussion

Communication:

Response time: Urgent communication via text messaging, goal of 48 hours to respond.

Meetings:

All in the Neighborhood will meet once a week on Sunday at 4PM PST (7PM EST) unless otherwise discussed as a group. A designated team member will send out the meeting agenda the day of Sunday meetings and minutes will be sent out no more than 48 hours after the conclusion of Sunday meetings.

Limitations/Constraints:

- Variable work schedules
- Differing time zones
- Coming from the three different concentrations

Conflict Resolution

- Anna: Lack of communication of team expectations or project workload. In the past I have worked with groups that one or two members do a significant amount of work. I

think that with clear communication our team will share the workload and collaborate to develop a strong project.

- Mikayla: Lack of communication between team members, esp. When due dates are approaching. Strategy: noting everyone's typical work schedule and communicating when things come up in advance when possible.
- Casey: Last minute or late submissions. Unclear expectations in terms of division of roles and responsibilities. Strategy: Clearly define each member's roles each week at team meetings. Group commits to completing work on time.
- Steve: I worry when one person seems detached from the group. Our first meeting was fabulous, and I don't think it will be a problem. We will continue to be inclusive in our work and meetings and be sensitive if a member is struggling or has conflicting needs and demands.
- Makala: Lack of communication (let us know up front if things come up, any changes, or if you need help), passive aggressiveness (let us know if something is wrong or contact directly), lack of effort (we know life happens so just be open and engaging so we can all succeed together).

Team Member's Name (Concentration)	Team Member's Photo (Optional, but preferred)	Team Member's Signature
Anna Fisher (Nutrition/RD)		Anna Fisher

Casey Shubrook (Nutrition)		Casey Shubrook
Makala Carrington Leadership in Practice		Makala D. Carrington
Mikayla Kuykendall (Nutrition/Dietetics)		Mikayla Kuykendall

Steven Yates (Leadership)		*Steven W. Yates*

Program and Policy Analysis

Low-income residents of Cumberland County, both in urban and rural areas, disproportionately face barriers to transportation that interfere with regular access to various resources including employment, school, health care, food, and social services. Furthermore, many resources are not concentrated in a specific location in Fayetteville, inhibiting access not only to residents outside of Fayetteville (typically rural) but also to urban residents, especially those experiencing financial hardship or transportation barriers. Limited access to these resources has resulted in poor health outcomes among these specific populations in Cumberland County when compared to both affluent residents of Cumberland County living in larger metropolitan areas and to residents of other North Carolina counties.

While there currently exists a public transit system in downtown Fayetteville, Fayetteville Area Transportation System (FAST), as well as a Cumberland County Transportation Program to service rural areas, they act separately which limits the effectiveness of increasing transportation access for these populations. To address these issues, our group proposes a Mobile Food Market (MFM) as well as a comprehensive policy focusing on nonemergency medical and critical transportation access that both serve to mitigate transportation barriers and improve health outcomes and break down silos within the NC Transportation System.

The MFM will travel to rural and low-income neighborhoods to reduce transportation barriers to accessing healthy foods. Grocery stores in Cumberland County are unequally dispersed throughout the county based on zip code and median household income, resulting in high rates of food insecurity and diet-related conditions among residents. Those without transportation, low-income, rural and urban residents, experience these issues more significantly than other populations. The program will provide fresh produce from local farmers in addition to

other essential grocery items via a unit that travels to high-need communities at community-determined days and locations. Additionally, the market will utilize nutrition incentive programs to increase participation and ensure equitable access.

The target population for this program are the economically stressed families of Cumberland County, specifically those utilizing federal food assistance programs. In Cumberland County, 54.9% of households with children are receiving Supplemental Nutrition Assistance Program (SNAP) benefits (Cumberland County, 2019). According to the USDA Food Environment Atlas, 96% of Cumberland County has low access to a grocery store. However, the county has many fast-food options (0.83 per 1,000 people) (USDA Food Environment Atlas, 2015). Access to grocery stores is limited and not equitable to all areas within the county; many residents rely on personal transportation to access food, which can be especially burdensome when travel time is significant or personal transportation is unreliable. There is currently only one Farmers Market serving all 327,127 residents of Cumberland County with unknown hours of operation.

Program:

For this program, the mobile market will include locally grown produce as well as food items that meet requirements of SNAP, the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), and the Senior Farmers Market Nutrition Program (SFMNP). The market will travel to specific rural and urban low-income areas. The target areas and neighborhoods will be identified using county data of residents enrolled in government nutrition assistance programs, income level, and community need. We will use community input to determine a reliable schedule for the market to visit different neighborhoods at predetermined locations. The Mobile Market will participate in food assistance programs such as Double Up

Food Bucks and accept EBT payments and WIC/Senior's coupons. This will increase access to healthy foods (especially fruits and vegetables) for those individuals who are experiencing food insecurity. The program will utilize an educational component, similar to SNAP-Ed, to ensure success and sustainability of program participants.

Given that the Mobile Market can be considered an essential solution but also one that is short-term and more downstream, our group also proposes a policy that will enhance currently existing public transportation systems that will improve access to resources throughout the county using a more upstream and long-term approach. The policy is aimed at creating more comprehensive transportation access for the disadvantaged populations of Cumberland County, NC. The policy has two major elements, the first is to require reduced fee or free transportation services to those individuals who have financial need; and the second is to ensure expanded coverage of services through enhanced schedules and increased routes to provide more comprehensive services for those individuals who struggle to find transportation to work, school, health care, food, and social service programs.

Transportation services for disadvantaged populations is documented in a GAO Report submitted to congress in December 2014 (Transportation Disadvantaged Populations, 2014). This GAO report focused on non-emergency medical transportation (NMET) and described the poorly coordinated conditions of the current system. The report further called for federal leadership to address the need to improve transportation access in disadvantaged communities.

The need for comprehensive transportation services for Cumberland County is explained in the State of the County Health report for 2019 (Green, 2020). There is no access to a vehicle for 6.5% of the population. The report also identifies a Food Environment Index score of 6, further verifying the limited access to healthy foods and high prevalence of food insecurity (this

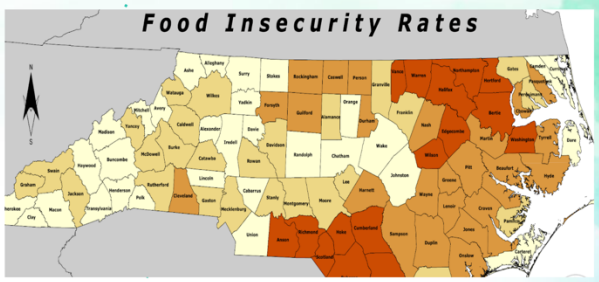
score is lower than the 7.5 score for the state of NC) (Transportation Disadvantaged Populations, 2014) The Cumberland County Community Health Needs Assessment for 2019 clearly states that “Public transportation is rare in Cumberland County, with an estimated 0.6% of residents commuting by public transportation, compared to the state value of 1.1%...” (North Carolina State Center for Health Statistics, 2019). In addition, 4.0% of the county residents walk to work compared to 1.8% statewide (Green, 2020).

Our policy is aimed at reducing fares for income-eligible individuals and increasing access to services through additional routes and improved bus schedules. This combined strategy is reported as the most effective way of increasing use of public transportation services (County Health Rankings & Roadmaps, 2020) (James, 2014). Taylor et al. summarize this best. “Frequent service draws passengers and high fares drive them away.” (Taylor et al., 2008)). This approach is consistent with the US Department of Transportation strategies (US Department of Transportation, 2020) and CDC Transportation Recommendations (CDC Transportation Recommendations, 2020).

All in the Neighborhood Persuasive Pitch Presentation

Neighborhood and Built Environment

- Housing
- Transportation
- Safety
- Parks
- Playgrounds
- Walkability
- Zip Code/Geography



Group Problem

Community & Priority Population

Low-income residents utilizing federal food assistance programs (SNAP/WIC)

Rural and urban residents within Cumberland County

Residents facing transportation barriers to accessing food

Mobile Market Program

Eliminating the Need for Transportation

Purpose

Purchase food products from local farmers/grocers and deliver to high-need communities

Education

SNAP-ED
Community events
Food demonstrations

Food Access

Provision of food to neighborhoods

EBT payments accepted

Enrollment

Sign-up site for social services such as WIC/SNAP

02. Leadership

Pathways for Prosperity Coalition

Importance

Focus on breaking barriers that influence generation poverty and lack of access

Comprised of 29 community asset organizations

Involvement

Infuse Neighborhood Nutrition into PFP focus areas

Assist in the facilitation of PFP summit

Insights on community members needs data

Proposed Impact

Decrease the percentage of low-income residents that are not near a grocery store from 7% to 5%

Aid in the support of precedent efforts

Key Stakeholder: CCDSS

Importance

- CCDSS = Sponsoring Agency
- Understanding of the Population and Needs

Involvement

- Governance the MFM.
- WIC and SNAP Authorization
- Expand access for eligible residents.

Accomplishments

- Food Access and Food Security
- Resident Education and Community Engagement

MOU Goals

Vision

Reduce Transport barriers for food

Measures

Metrics: CCPHD Needs Report

Roles

Governance
Deliver Foods
Utilize WIC/SNAP

Funding

Shared services and returned revenues


03.
Nutrition


Why a Mobile Market?
Out of the Garden Project .org
LOCAL MOTIVE
MOBILE FARMERS' MARKET
INTER-FAITH
FOOD
SHUTTLE
FEED · TEACH · GROW
MEMBER OF FEEDING AMERICA

Program Objectives

1. Reach 75% of identified food swamp neighborhoods
2. Reduce food insecurity among those below 200% FPL by 20% within one year

Outcomes

Short (1-3 yrs)

Participation in MFM

Utilization of WIC and SNAP

Increased fruit and veg

Intermediate (4-6)

Local food environment attitude

Decreased perception of transportation barriers

Long (7-9 yrs)

Reduced food insecurity

Increased awareness of transportation

Timeline and Budget

Timeline

Formal analyses every 2 years to determine impact and reach

Program Costs

Start up costs: Market (refrigerator, storage)
Ongoing costs: Two part time employees, Purchase of local produce, Purchase of WIC and SNAP eligible items

Stakeholder Engagement

Importance

- Program iteration for effectiveness and sustainability

Activities

- Planning: Listening groups
- Process: MFM participation, Focus group, Individual interviews

Challenges and Strengths

Challenges

Non-experimental design

Selection bias

Strengths

Iterative process

Led by community and stakeholders

Internal data tracking

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APPENDIX B: MAKALA CARRINGTON'S INDIVIDUAL WORK

Individual Problem Statement

Transportation Access and Inequities in Cumberland County

Social Determinant of Health

Health inequities are showcased in many forms, including housing, education, income, environment, access, information, resources, etc. This also includes the access to goods and services, presenting an association between social class and race. The role of public health leaders is to equitably allocate resources, fight for all humans' rights, and challenge power structures that cause disparities between groups. These structures and institutions impact health outcomes influenced by social determinants of health.

Social determinants of health impact prevention in various ways. As public health professionals, we are challenged with providing equitable opportunities for all community members. Social determinants such as economic stability, education, social and community context, health and health care, and neighborhood and built environment influence these challenges as well. We as professionals are unable to apply prevention strategies without acknowledging social determinants of health that impact the health of communities. They also shape how our prevention strategies will be created and implemented. Social determinants of health, specifically neighborhood and built environment, impact access to treatment and services that influence positive health outcomes and quality of life. Neighborhood and built environment include access to foods that support health eating patterns, crime and violence, environmental conditions, and quality of housing. Furthermore, lack of access and transportation to various resources including employment, education, health care, food, and social services detrimentally impact health (Social Determinants of Health, 2021).

Geographical and Historical Context

The upper coastal plain of North Carolina is known as the "Sandhills", comprising mostly of Cumberland County and its municipalities, including Eastover, Falcon, Godwin, Hope Mills, Linden, Spring Lake, Stedman, Wade, and the largest municipality, Fayetteville (2019). Fayetteville-Fort Bragg is known for its historic tie to the military as one of the largest U.S Army installations in the world. Fort Bragg soldiers are known to migrate often, responding to deployment operations across the nation. Historic downtown Fayetteville also showcases the appreciation for our armed forces by highlighting the 82nd Airborne Museum, War Memorial Museum, and Freedom Memorial Park. Due to Fort Bragg and the Fayetteville Veteran's Administration Health Care Center, the veteran population's needs are significantly higher compared to other NC counties.

Cumberland County also has the highest population density compared to all other 33 counties in the Eastern North Carolina (ENC) region, maintaining a steady population of approximately 330,000 people from 2013-2016. The county is mostly comprised of individuals ages 25-34, predominately non-Hispanic white (51.8%) with a notable African American population of 38.7%. Compared to NC and other ENC counties, the birth rate is considerably higher in Cumberland County as well as the American Indian and Alaska Native (AIAN) tribal distribution (2019). Robeson County, Lumberton a neighboring city and county of Fayetteville, has a high density of American Indians that also rely on Cumberland County's assets.

Priority Population

Our priority population includes low-income, urban and rural residents of Cumberland County receiving government assistance and facing disproportionate health outcomes from lack of access due to zip code. Specially, Eastern Fayetteville residents suffer disproportionate

impacts on health and quality of life due to socioeconomic status, income, zip code, and education. The median household income in Cumberland County is $44,810, considerably less than the state average ($48,256). Additionally, income differs significantly based on geographic location. For example, the median household income for zip code 28308 is approximately $114,861 a year compared to other zip codes that bring in less than three times that amount in a given year (zip code 28312 = $42,725 and Eastern Fayetteville zip code 28301 = $24,409).

Hence, low socioeconomic status communities in Eastern Fayetteville are more likely to suffer from chronic conditions such as diabetes, obesity, and cancer (2019). Cumberland County residents also face transportation barriers due to gaps in the Cumberland County Transportation Program that only services rural populations, limited transit routes provided by the Fayetteville Area System of Transit (FAST) that exclude high-need rural and urban communities, and physical or financial challenges of community members (Community Transportation Program, 2021).

Measures of Problem Scope

According to the Community Health Needs Assessment Surveys (2019), transportation access to increase the use of available resources are of greatest concern. The Fayetteville Area System of Transit (FAST) is the services more than 6,000 passengers daily. However, public transportation remains uncommon in Cumberland County with an estimated use of 0.6% residents (mostly non-Hispanic White) compared to the state value of 1.1% (2019). Unfortunately, the root cause of access to resources, employment, healthcare, community assets, and daily activities that contribute to health and quality of life remain. The number of households in Cumberland County without a vehicle is 6.5% countywide, resulting in 4% of residents walking to work (compared to the state value of 1.8%) (2019). Lastly, the number of households

with no car and low access to a grocery store is 2.5% countywide (Cumberland County Community Health Needs Assessment, 2019). Lack of access to reliable, safe, consistent, and convenient transportation in Cumberland County is essential to residents suffering disproportionately due to a plethora of inequities, including, but not limited to safety, walkability, zip code, socioeconomic status, income, education, and race/ethnicity.

Cumberland County lacks social and economic opportunities to address the number of children (25.7%), senior citizens (10.2%), and disabled individuals (25.7%) living in poverty. There is limited access to safe and affordable housing that includes a kitchen. As a result, low-income communities placed in food swamps, such as Eastern Fayetteville residents in zip code 28301, are forced to rely on fast-food and gas stations for nutrition (2019). Over time, these inequities can intensify residential segregation, limit economic resources and social support, influence high stress levels, and encourage maladaptive coping behaviors. There is also a high percentage of individuals insured due to the reliance on government assistance programs (89.2% receiving Medicare or Medicaid, 54.9% of households receiving CHIP) and military dependency (TRICARE) (17.4%). High poverty rate is also an outcome and consequence of poor economic conditions. Children are more susceptible to physical, behavioral, and emotional health problems. Seniors face physical limitations, medical needs, and social isolation. Without adequate income, populations may not be able to afford necessary expenses such as transportation or food.

Rationale/Importance

Data from the Community Health Needs Assessment of Cumberland County identified nine significant health needs, including access to health services, immunizations & infectious diseases, chronic and respiratory diseases, and substance abuse. Additionally, the leading causes

of death were identified as heart disease, cancer, accidental injuries, chronic lower respiratory diseases, and cerebrovascular diseases. The assessment also prioritized access to health services as the number one health priority for Cumberland County (2019). Current efforts include the State of North Carolina Community Transportation Program, a program to provide safe, dependable, accessible and affordable transportation to rural Cumberland County residents as well as the Rural Operating Assistance Program Grant to address physical, financial, or other barriers to access (Community Transportation Program, 2021). However, this program is not available to urban residents of Cumberland County who also face similar health inequities and lack the necessary resources to address transportation and access barriers.

Disciplinary Critique

As public leaders, we strive to create opportunities for all individuals within a population to advance health equity. In some ways, these approaches work, in other ways, we struggle to provide comprehensive, equitable access or treatment for all individuals and refraining from the "one-size-fits- all approach". As much as we would like to have this philosophy be the golden standard of care, in most cases, it falls short. This emphasizes the need to address social determinants of health, cultural humility, cultural competence, and the advancement of health in all policies in public health. This allows us as professionals to be humanized and appreciative of our populations' lived experiences, cultural values, uniqueness, and diversity.

Sustainable, reliable transportation access is essential to ensure that comprehensive health and quality of life needs are met such as grocery store visits, education, healthcare, and social services. With over 37% of working families living below the poverty level, low median household income and zip code are risk factors for detrimental impacts to individuals' health and well-being (2020). Structural biases disadvantage others, cause inequities between groups, and

allow institutions to control resources, rights, power, and status as well as maintain barriers. Ultimately, public health professionals can address the impact and root causes of transportation access on individuals' health by prioritizing low-income, urban and rural perverted neighborhoods. We can also do this by increasing access to comprehensive and quality health care services that currently exist and leveraging community organizations. By engaging community members and stakeholders to address these root causes, we enable positive influences on health outcomes, reduce health inequities, and provide Cumberland County residents the opportunity to achieve overall health in a place they call home.

Evidence-based Solutions Outline

Policy to Address Transportation Access to Health Services in Cumberland County

Current Stakeholder Involvement

- Current efforts include the State of North Carolina Community Transportation Program, a program to provide safe, dependable, accessible and affordable transportation to Cumberland County residents.
- Rural Operating Assistance Program Grant to address physical, financial, or other barriers to access (Community Transportation Program, 2021).
- The Community Transportation Program receives a Home and Community Care Block Grant administered by the North Carolina Division of Aging and Adult Services through the Mid-Carolina Area Agency on Aging.
- The Transportation Advisory Board (TAB) supports the Community Transportation Program, provides technical assistance, and includes members appointed for two years by the Cumberland County Board of Commissioners.

Policy Functions

- The primary reasons for lack of healthcare access include limited availability of public transportation, lack of transportation options serving late-night or weekend needs, payment processing difficulties, high out-of-pocket costs for transportation, limited capacity of transit systems to handle wheelchairs and scooters, and inadequate pedestrian facilities and safety.
- This policy will legislatively define transportation disadvantaged (TD) populations as those who are unable to transport themselves or purchase transportation due to physical or mental disability, income, or age (older adults, disabled individuals, at-risk children) and will extend

hours of operation for the Cumberland County Health Department to include Saturdays (9am – 5pm).

- Mandate all discharge planners/social workers to register patients with transportation providers at the same time that initial/follow-up appointment is scheduled and other paperwork are completed.
- Provide health, employment, education, and life-sustaining trips that are non-emergency medical transportation and patient centered.
- Require all Cumberland County Health Department Community Health Workers to hire and train transportation navigators to drive and staff a central phone line.
- Ensure the enforcement of taxi, transit, and ride-sharing service provisions outside of Medicaid/Medicare through the North Carolina Transportation Program funds, coordination of public and private entities, public or private brokerages, and managed care models.
- Incentivize travel credits through registration and participation in comprehensive service programs provided by the health department and community organizations to be redeemed for free "leisure" rides through transportation navigators or partner agencies.

Equity Considerations

- Eliminating policy barriers that include budget cuts for transportation projects, state driver's license requirements, and lack of planning/accessibility for transit options in low-income communities.
- Using a central, focused program eliminates miscommunications between care teams as well as confusion or transportation complications for patients.

Policy Alternative

- Require the distribution and access of bus passes purchased from Fayetteville Area System Transit (FAST) to low-income riders who are physically able patients at safety net organizations and the Cumberland County Health Department, funded by the North Carolina Community Transportation Program and Rural Operating Assistance Program Grant.
- This policy does not take into account that not all individuals who are low-income and have a free bus pass are in close proximity to a bus stop based on their geographic location. This policy also does not factor in disabled individuals that may really need transportation but are unable to ride a city bus.

Advantages

1. Coordination can lower costs and increase efficiency of connecting TD populations to health care services, regardless of demographic and economic conditions in the populations served.
2. Reimbursement for public transportation was also shown to increase the use of community clinics over urgent care centers or emergency departments, which can save costs for both patients and health care providers.

Disadvantages

1. Rides may be limited by program funding source or type of ride
2. Funding streams and cycles can also be inconsistent

Program to Address Transportation Access to Health Services in Cumberland County

Program Functions

- National best practices advise mobility management, service coordination, and interagency partnerships to address health care access in low-income communities.

- Expand telehealth and provide home delivery of medications through the Cumberland County Department of Health and Human Services, CenturyLink (subsidized/free internet/phone provider), and Cape Fear Valley Hospital to connect virtually with rural and urban clinics/patients without transportation access to provide consultation on policies and services.
    - Live video is used for diagnosis and treatment, similar to an in-person appointment.
    - Store-and-forward uses a secure connection to send videos, x-rays, and other images for evaluation or other specialty services.
    - Remote patient monitoring aims to avoid readmissions through transmission of data after a patient goes home from treatment.
    - mHealth, or mobile health, refers to the use of notifications and applications to administer public health care and education.
- Provide door-to-door mobile units (pharmacy delivery, prioritizes those without transportation or access to free/subsidized transportation) for assessments, case management, referrals, medications, and some specialty care.
- This policy positively affects public health by connecting underserved, vulnerable populations to life-saving service through rapid response remote care.

Equity Considerations

- Many barriers to health care access come from five main areas: infrastructure, cost, vehicle access, distance and time burden, and policy (Health Research and Educational Trust, 2017). This program will allow the patient to avoid all of these barriers presented to obtain health care access right within their homes.

- This program will also allow the use of an online patient portal to see test results, schedule appointments, request prescription refills or email a doctor, order testing supplies and medications online, and receive email, text, or app reminders when it is time for a flu shot, foot exam, or other preventive care service.

Program Alternative

- Implement a program that innovates a health center restructure by creating a "one-stop-shop" to provide a variety of health and social services in one location to ensure that patients receive the most out of one visit to prevent multiple trips and different providers/referrals.
- There is precedent for this program at the Cumberland County Health Department that provides most services already. The program would not need to be created, instead it would just need to evaluate which services would patients benefit from the health department having in addition to the other services that are provided currently.

Advantages

1. Provide transportation solutions for the uninsured like volunteer drivers, hospital networks, and telehealth.
2. Avoid unnecessary hospitalizations, particularly among elderly persons, reduces trips, and increases compliance with treatment protocols.

Disadvantages

1. Consider that those receiving insurance through the Marketplace still may not have resources to access care, and there may be as many 6.4 million who remain uninsured
2. Differing eligibility requirements, lack of leadership due to other demands, staff volunteer commitment, and consistent information/technical assistance

Stakeholder Analysis

Introduction

Social Determinants of Health: Neighborhood and Built Environment

As public health professionals, we are challenged with providing equitable opportunities for all community members. Social determinants such as economic stability, education, social and community context, health and health care, and neighborhood and built environment influence these challenges as well. We as professionals are unable to apply prevention strategies without acknowledging social determinants of health that impact the health of communities. Specifically, neighborhood and built environment, impact access to treatment and services that influence positive health outcomes and quality of life. Neighborhood and built environment include access to foods that support health eating patterns, crime and violence, environmental conditions, and quality of housing. Furthermore, lack of access and transportation to various resources including employment, education, health care, food, and social services detrimentally impact health (Social Determinants of Health, 2021).

Program and Policy Transformation to Increase Access

Advancing health equity for all, innovating prevention strategies by the community and for the community, as well as tackling health disparities is the only way that we are able to effectively implement prevention and treatment within our populations. This involves addressing community needs, formulating partnerships with community stakeholders, and implementing community driven initiatives. Our program and policy focus on low-income, urban and rural residents of Cumberland County receiving nutrition government assistance and face disproportionate barriers to healthy foods due to the unequal disbursement of grocery stores based on zip code. Disadvantaged populations in Cumberland County also face transportation

barriers due to gaps in the Cumberland County Transportation Program that only services rural populations, limited transit routes provided by the Fayetteville Area System of Transit (FAST) that exclude high-need rural and urban communities, and physical or financial challenges of community members (Community Transportation Program, 2021).

Using the health-in-all policies approach, we will implement a policy that (1) requires reduced fee or free transportation services to those individuals who have financial need and (2) ensures expanded coverage of services through enhanced schedules and increased routes to provide more comprehensive services for those individuals who struggle to find transportation to work, non-emergency medical care, food and groceries, and social service programs. We will also create a Mobile Market that services rural and urban low-income communities and provides produce and grocery food items eligible for purchase with SNAP benefits.

Communities will be serviced based on income level, community need, and zip code of participants enrolled in government nutrition assistance programs throughout Cumberland County. The Mobile Market is a band-aid program but will provide immediate assistance to decrease risk of chronic disease and increase food alternatives in populations that live mostly in food swamps. Unlike a food desert (low access to a supermarket or large grocery store), a food swamp is "an area where an abundance of fast food, junk food outlets, convenience stores, and liquor stores outnumbers healthy food options" (Food Swamps Contribute to Obesity More than Food Deserts, 2021). Our proposed policy is a five-year infrastructural change to increase access to comprehensive services such as employment, education, and health services. As a result of reducing transportation barriers, we hope to increase the opportunity for stable employment, educational access/attainment, nutrition supplements, and healthy quality of life. The overall aim

for our program and policy is to decrease food insecurities and reduce risk of chronic diseases over time.

Stakeholders

Our team will integrate the expertise of four types of stakeholders: Cumberland County and North Carolina state public officials, non-profit organizations that focus on providing comprehensive services to advance equity, public health and transportation experts, and low-income, urban and rural residents of Cumberland as well as local farmers and grocery store managers. The county officials on our stakeholder team can provide insight into the existing public policies of Cumberland County and how successful previous efforts have been. They will also provide information on how the government might support our program and policy.

Non-profit organizations are the largest part of our stakeholder team. They are not only the most passionate group of stakeholders but are often in the best position to have the most significant impact. These organizations will help our intervention in the areas of equity and access. Public health and transportation professionals on our team are from Cumberland County organizations that have a high volume of traffic of low-income children, families, and disadvantaged populations in need of comprehensive services such as nutrition and transportation access. These stakeholders will inform and help us to address access barriers as they relate to food insecurity, transportation access, and improving health and quality of life. Additionally, low-income, urban and rural residents of Cumberland County receiving nutrition government assistance and face transportation barriers will help us to understand their needs, their interest in specific intervention strategies, and how best to serve their communities.

Stakeholder Analysis

The stakeholder analysis tools used to identify potential stakeholders include (1) a Stakeholder Analysis Map (2) Power Analysis Map (3) Power Analysis Grid and (4) a Give-Get Grid. Table 1 in the Appendix A shows a Stakeholder Analysis map that organizes individuals according to their interest in the program and policy. Table 2 shows a Power Analysis Map that considers all stakeholders' power and influence that impacts their level of interest, involvement, support and assessment of buy-in or need for persuasion. Table 3 shows a Power Analysis Grid that is a written version of the Power Analysis Map and is based on stakeholders' influence and power (high or low). This grid also determines how to work with each stakeholder in the engagement process. Lastly, Table 4 shows a Give-Get Grid that understands potential expectations of engagement in a community-academic partnership, exemplifying the gains of our team, input from stakeholders, and stakeholder benefits.

Key stakeholders that would inform this process include the existing Cumberland County Community Transportation Program, the Fayetteville Area System of Transit (FAST) Advisory Committee, Cumberland County residents, local community social services (non-profit organizations, support services, economic relief and aid), local government services (health departments, city/county representatives, community health workers, social workers), and community staples (faith-based organizations, advocacy center, community centers, recreation centers, public schools, universities, city transportation). These stakeholders need to be at the table to highlight their perspectives within their role in the community. All stakeholders have needs, perspectives, and barriers that must be addressed by using systems thinking approaches to understand how to best provide a solution.

Local leaders involved in transportation such as the Cumberland County Transportation Program, the Fayetteville Area System of Transit (FAST) Advisory Committee, and the North Carolina Department of Transportation represent transit coordination, are able to speak on current protocol, propose interventions, and prevention strategies, as well as help formulate tools to address social determinants and health disparities to prevent negative health outcomes. Local community social services such as the Cumberland County Department of Public Health, Cumberland County Public Schools, and the Cumberland County Department of Social Services are important to share a voice at the table surrounding current efforts to reduce food insecurities in urban and rural communities. Most of these organizations provide services that can alleviate disparities that cause stress and impact health. Hearing their view on successful projects, initiatives, and interventions would be of great use for future efforts. Local government workers and officials also represent the main structures of the community and have the ability to allocate or advocate to the state for funding certain projects.

As noted in Tables 1 and 4 of the Appendix A, local representatives, such as Mayor Mitch Colvin, are also well versed on current efforts and potential ways to address problems through policy. They have hands-on experience working within our target communities, have built relationships, established trust, and understand the importance of community engagement and representation. Cumberland County community members also represent their own personal experiences that have the ability to influence others. Community staples such as faith-based institutions, schools, and coalitions are “safe haven” places where most community members gather. Without the voices of the community, we as public health professionals are unable to address pressing problems. However, all stakeholders must collaborate cohesively,

acknowledging power and privilege that high profile stakeholders possess, at the systems level to ensure that the root problem is addressed to prevent uncovered barriers.

Policy & Program Alternatives

Policy Alternatives: Advantages and Disadvantages

There are successful policy alternatives that also have the potential to increase overall access and transportation to various resources including employment, education, health care, food, and social services. Legislative officials can require all scheduling staff at safety net organizations (i.e., FQHCs) and the Cumberland County Health Department to coordinate transportation (i.e., rideshare) and distribute FAST bus passes to all patients (Improving Transportation Access to Health Care Services, 2020). This would ensure the enforcement of taxi, transit, and ride-sharing service provisions outside of the North Carolina Transportation Program that only services rural residents.

Coordinating transportation can lower cost and increase the efficiency of connecting populations without transportation to health care services (Improving Transportation Access to Health Care Services, 2020). Providing transportation was also shown to increase the use of community clinics over urgent care centers or emergency departments, saving costs for both patients and providers (Improving Transportation Access to Health Care Services, 2020). However, rides may be limited by the program funding source or type of rideshare outlet. Funding streams and cycles can also be inconsistent. Unfortunately, this policy fails to consider that not all individuals who are low-income and have a free bus pass are in close proximity to a bus stop based on their geographic location. This policy also does not factor in disabled individuals that may really need transportation but are unable to ride a city bus.

The primary reasons for lack of healthcare access include limited availability of public transportation, lack of transportation options serving late-night or weekend needs, payment processing difficulties, high out-of-pocket costs for transportation, limited capacity of transit systems to handle wheelchairs and scooters, and inadequate pedestrian facilities and safety (Improving Transportation Access to Health Care Services, 2020). A policy could also be implemented to legislatively define transportation disadvantaged (TD) populations as those who are unable to transport themselves or purchase transportation due to physical or mental disability, income, or age (older adults, disabled individuals, at-risk children) (Improving Transportation Access to Health Care Services, 2020). This policy will also extend of the hours of operation for the Cumberland County Health Department to include Saturdays (9am – 5pm).

Program Alternatives: Advantages and Disadvantages

To increase access to comprehensive services including employment, education, health care, food, social services, a program could also be implemented that innovates a health center restructure by creating a "one-stop- shop". This "one-stop-shop" would provide a variety of health and social services in one location to ensure that patients receive the most out of one visit and prevent multiple trips to different providers/referrals (Improving Transportation Access to Health Care Services, 2020). Additionally, there is precedent for this program at the Cumberland County Health Department that provides most services already. The program would not need to be created, instead it would need to evaluate services that patients benefit from most, in addition to the other services currently provided. However, restructuring could take time to plan, implement, and execute efficiently across the health department and may not be ideal for a wide variety of providers/referrals that will be necessary for a high-volume "one-stop-shop" location.

A program could also expand telehealth and deliver medications through the Cumberland County Department of Health and Human Services, CenturyLink (subsidized/free internet/phone provider), and Cape Fear Valley Hospital. This program would allow patients to virtually connect with rural and urban clinics without transportation (Improving Transportation Access to Health Care Services, 2020). Patients would avoid unnecessary hospitalizations, particularly among elderly persons, reduces trips, and increases compliance with treatment protocols (Improving Transportation Access to Health Care Services, 2020).

This program will also allow the use of an online patient portal to see test results, schedule appointments, request prescription refills or email a doctor, order testing supplies and medications online, and receive email, text, or app reminders when it is time for a flu shot, foot exam, or other preventive care service (Improving Transportation Access to Health Care Services, 2020). However, those receiving insurance through the Marketplace may not be able to access this level of care. Also, differing eligibility requirements, increased staff commitment, and necessary technical assistance may also pose challenges.

Recommendation and Conclusions

The alternative policies address barriers that include budget cuts for transportation projects, state driver's license requirements, and lack of planning/accessibility for transit options in low- income communities. As a result, miscommunications between care teams and confusion or transportation complications for patients are decreased. The pressing barriers to health care access include infrastructure, cost, vehicle access, distance/time burden, and policy (Improving Transportation Access to Health Care Services, 2020). The program alternatives mentioned allow the patient to avoid these barriers to obtain health care access conveniently or right within their homes.

Our proposed policy focuses on infrastructural change to increase access to comprehensive services by providing a reduced fee/free transportation services and expanding FAST transit route coverage. Reducing transportation barriers, residents have an increased opportunity to obtain a healthier quality of life. Although our Mobile Market program is a band-aid solution for a systems level public health problem, the need remains urgent. Navigating legislation may take time, however, there is a large democratic party and county voters that could allow for a volume of support. Local demographics change also suggests that minority groups in the Cumberland County will continue to develop greater political influence to create and maintain impactful change (Janz, 2018).

Engagement and Accountability Plan

Part 1: Engagement Plan

Program Plan

Neighborhood and built environment impact access to treatment and services that influence positive health outcomes and quality of life. Neighborhood and built environment include access to foods that support health eating patterns, crime and violence, environmental conditions, and quality of housing. Furthermore, lack of access and transportation to various resources including employment, education, health care, food, and social services detrimentally impact health (Social Determinants of Health, 2021). Our program will focus on low-income, urban and rural residents of Cumberland County receiving nutrition government assistance and face disproportionate barriers to healthy foods due to the unequal disbursement of grocery stores based on zip code. We will create a Mobile Market that services rural and urban low-income communities and provides produce and grocery food items eligible for purchase with SNAP benefits. Communities will be serviced based on income level, community need, and zip code of participants enrolled in government nutrition assistance programs throughout Cumberland County. The purpose of the Mobile Market is to increase access to comprehensive services such as employment, education, and health services. As a result of reducing transportation barriers, we hope to increase the opportunity for stable employment, educational access/attainment, nutrition supplements, and healthy quality of life. The overall aim is to decrease food insecurities and reduce risk of chronic diseases over time.

Engagement Plan Overview

We will assemble all stakeholders listed in Table 1 and Table 2 of the Appendix B for an initial networking session to conduct icebreaker activities, facilitate interactive scenarios on how

to incorporate the 9 principles of community engagement using an equity lens, assign teams based on level of engagement, introduce the timeline and outline of the project, and build overall rapport. High power and high interest stakeholders would be asked to join the Neighborhood Nutrition Advisory Board. We would ask our key stakeholders (high and low power/high interest) to participate in the Mobile Market Steering Committee. Lastly, low power and high interest stakeholders will be asked to join/facilitate Neighborhood Nutrition Town Halls. All stakeholders involved will be invited to attend quarterly Neighborhood Nutrition Board Meetings. Engagement methods to involve stakeholders will include a Stakeholder Power Analysis Map and the Nominal Group Process. Detailed engagement methods are outlined in Table 2 of the Appendix B. Table 3 shows a Stakeholder Power Analysis map that organizes individuals according to their interest in the program and considers all stakeholders' power and influence that impacts their level of interest, involvement, support and assessment of buy-in or need for persuasion. This table also determines how to work with each stakeholder in the engagement process.

Neighborhood Nutrition Board Meetings

The Neighborhood Nutrition Board meetings will be held every 3 months to present quarterly reports, showcase progress, present data collected, and vote anonymously on decisions compiled by the advisory board based on steering committee meetings and town halls. The Board of Directors will be comprised of the ACC Leadership Team (Table 1 in Appendix B) and representatives from each sub-group (1 representative from the advisory board, 1 representative from the steering committee, and two external community members from monthly town hall meetings). Elections for new board members will be held annually, however, members are only able to serve a maximum of 3 terms.

Neighborhood Nutrition Advisory Board

The Neighborhood Nutrition Advisory Board will convene 3-5 times a year in preparation for each quarterly board meeting. Cumberland County local government leaders, community members, public health workers, and social service workers will work together to assess the effectiveness of the program through steering committee monthly reports. Local government stakeholders will engage in the assessment process by evaluating factors and gaps that may impact the success of the Mobile Market and the health and well-being of the community. The board would provide high-level input and guidance to the steering committee throughout the year and incorporate monthly evaluation and feedback sessions with the steering committee chair. The board will also review the steering committee's reports and analyze data to provide feedback and recommendations, identify gaps, and compile information for quarterly board meetings.

Mobile Market Steering Committee

Along with hosting recurring meetings throughout the year, the steering committee would designate smaller, invite-only, dialogue groups to allow external community stakeholders (faith leaders, grassroots stakeholders, community advocates) to engage and network. Additionally, a monthly newsletter will also be disbursed by the committee to the entire stakeholder list to keep low interest/high power stakeholders informed of decisions and progress. The steering committee will have multiple workgroups to ensure that all stakeholders are involved. Workgroups will include (1) Funding and Community Resources (2) Neighborhood Nutrition Town Hall and (3) Data Collection and Reporting (Dialogue Groups). The feedback from the town hall sessions will steer all of our actions and decisions. To avoid major challenges, a chair will be appointed to facilitate 1:1 meetings with each member to maintain order and cohesion. The chair will utilize

"Doodle" to find agreeable times for everyone to meet and will provide a month of advanced notice for all meetings. The chair will incorporate the fist-to-five method to ensure that all stakeholders' opinions and arguments are vocalized (Fist to Five Voting and Consensus, 2021). The chair is also able to initiate an anonymous voting system if power challenges or a tie occurs. Anonymity will allow our stakeholders to vote without bias based on power or privilege.

Dialogue Groups: Dialogue groups will be a practical strategy to convene additional, invite-only community members and stakeholders for engagement. We will facilitate networking sessions to provide opportunities for stakeholders to share ideas and ask questions. Our goal is to initiate an ongoing conversation regarding the lack of access to healthy foods and grocery stores within low-income communities in Cumberland County to promote trust and gain. We hope to encourage participation from community members directly impacted to provide an opportunity to express their experiences and input on our program in a more intimate setting, outside of the town hall sessions. In establishing these dialogue groups, we acknowledge there may be challenges related to participation and implementation. To encourage participation we will offer incentives, such as food or financial compensation for attendees. Members with facilitation techniques most appropriate to their professional experience will be able to encourage conversation. To anticipate the need to set meeting times conducive to multiple schedules, we will use existing communication channels and hold meetings locally based on the preference of the community stakeholder. We hope dialogue groups are effective in formulating community buy-in as well as creating and maintaining community engagement (The University of Kansas, 2020).

Systems Mapping: Initially, we will incorporate a systems mapping process to explore dynamics that influence residents' neighborhood and build environment, specifically lack of

access to healthy foods and grocery stores based on zip code and income. This process will facilitate engagement between committee members in identifying the relationships among the community residents, cultures, organizations, programs, services, and policies in the system. This approach will help the group develop a collective appreciation of the system (Fromer, 2019). Systems mapping will also challenge members to frame gaps, dynamics, or weaknesses as opportunities instead of blame.

Nominal Process: To brainstorm and identify solutions to challenges that may arise from the Mobile Market program, we will rely on the nominal process: silent generation, round robin, clarification and voting (ranking). We will allow time for silent idea generations by asking each member to think of a primary and secondary solution of their choice. Members will be able to think of new ideas outside of the initial silent generation. However, all members must wait their turn before sharing with the group/writing on the white board, to uphold the rules of the round robin method (McMillan, King, & Tully, 2016). This process will continue until all ideas are generated. The clarification stage will engage members to group together ideas with consent from all participants to ensure participant understanding and informed decision making. Participants may also exclude, include or alter ideas, as well as generate grouping themes (McMillan, King, & Tully, 2016). Lastly, all participants will rank their top preferences in numerical order, with the highest number being the most preferred (McMillan, King, & Tully, 2016).

Neighborhood Nutrition Town Hall

Neighborhood Nutrition Town Hall meetings will be held each month for all Mobile Market participants, community members, and stakeholders to enable feedback and listening. This town hall will be facilitated by the Neighborhood Nutrition Town Hall workgroup within

the steering committee. Workgroup members will record input from community members to help define success, challenges, and how the Mobile Market has impacted the community's overall health. Community members who do not serve on our stakeholder team will be encouraged to provide feedback to at any time on our website, via phone, or attending quarterly board meetings. We hope that community members will help inform conversations about barriers to health improvement and community priorities. We will be transparent regarding our progress in building trust in Cumberland County and emphasize the importance of their feedback in assessing our program to make informed decisions.

Empathy Interviews: Our team will be trained to administer empathy interviews. Empathy interviews will help our stakeholders explore their mental models. Information that comes to light during these interviews will help us understand what influences their thinking and may uncover barriers of the system. Other techniques, such as group discussion and public testimonials could cause problems for stakeholders, who may be uncomfortable, undocumented, or exemplify power/privilege struggles. The interviews would be conducted based on language preference for the interviewees and administered in a neutral place decided by the stakeholder. Interviewees would be matched a team member of their choice whom they trust to facilitate rapport.

Call for interviews will be announced at the beginning of each town hall meeting and all participants will be moved to a breakout room for further instructions. Interviews will be conducted and recorded during regular town hall meetings via zoom in multiple breakout rooms, one per person. Participants will be given the option of video or audio-only. After the empathy interviews have been completed, town hall workgroup members will participate in a story share-and-capture session in the following steering committee meeting. Group members who

administered the interviews will share their findings while others capture key ideas and quotes. Analyzing the data as a group will create a shared understanding of the problem and the lived experiences/expertise of the interviewees. Data will also be aggregated into empathy maps, which will help the team understand user needs.

Part II. Accountability Plan

Overview

Our program focuses on low-income, urban and rural residents of Cumberland County receiving nutrition government assistance and face disproportionate barriers to healthy foods due to the unequal disbursement of grocery stores based on zip code. We will create a Mobile Market that services rural and urban low-income communities and provides produce and grocery food items eligible for purchase with SNAP benefits. Communities will be serviced based on income level, community need, and zip code of participants enrolled in government nutrition assistance programs throughout Cumberland County.

In order to reduce access barriers in Cumberland County, an ACC will be established with the overall aim of decreasing food insecurities in Cumerland County to improve the health and well-being of residents. The Cumberland County Department of Social Services (DSS) will serve as the backbone organization for the ACC. DSS is a high-need agency in Cumberland County with multiple stakeholder relationships. DSS also works closely with the Cumberland County Public Health Department surrounding data collection and program implementation/evaluation.

Purpose

The purpose of this Memorandum of Understanding (MOU) is to develop a framework for cooperation to promote a sustainable partnership between the ACC Leadership Team, Board

of Directors, and Cumberland County Department of Social Services to decrease food insecurity in Fayetteville and improve access to nutritious and sufficient food. This partnership is rooted in the values of integrity first, community before self, and equity in all we do. This partnership is designed to streamline the process of developing an ACC as well as the delivery, evaluation, and sustainability of the Mobile Market program. The Mobile Market program will promote a reduction of food access barriers, an increase in food sustainability, a decrease in child obesity, and a decrease in chronic morbidities such as asthma, diabetes, and heart disease. The vision of this program is to improve the overall health and well-being of Cumberland County residents by reducing access barriers that influence food insecurities.

Expectations

All ideas, plans, and negotiations will be discussed with the ACC Leadership Team and Board of Directors before implementation.

Mobile Market Operations

1. CCDSS will share relevant de-identified information on communities enrolled in social service programs, neighborhoods/zip codes of residence, and health outcomes to the extent legally allowed to help assist with evaluation and locating high-need communities.
2. CCHD and CCDSS will continue to collaborate with one another sharing information for future community health assessment (CHA).

Program Funding

1. CCDSS will contribute funding to the Mobile Market on a yearly basis. The amount of funding will be determined by the Mobile Market Steering Committee. Funding will be used as a subsidy for WIC and SNAP users to utilize at the Mobile Market.

2. The Cumberland Community Foundation will contribute grant funding. This funding will be used specifically for administrative costs, program development, evaluation, data collection, SNAP education, and community engagement efforts. This funding will also provide long-term sustainability.
3. CCDSS will manage all of the funding for the program.

Community Engagement and Sustainability

1. DSS and Pathways for Prosperity Coalition will work together to develop an additional focus area to the coalition, Neighborhood Nutrition, to jointly develop a set of objectives and strategies to support measurable improvements.
2. DSS and Pathways for Prosperity Coalition will coordinate with the ACC Leadership Team and Board of Directors to facilitate a summit event, convening 250 local leaders and community members. This summit will share data improvements and program updates from an annual report, allow stakeholders to engage with community members and Mobile Market users, and present future directions and implications for create and maintain positive change.

Program Evaluation and Data Collection

DSS and the Cumberland County Health Department will evaluate the Mobile Market program. This includes the number of participants, geographic information, socioeconomic status information, program costs, vendor satisfaction, participant satisfaction, perception of improvements surrounding access, and changes in food consumption. This evaluation will be conducted every 6 months using the PDSA cycle. Specific measures that will be monitored annually include the percent of WIC and SNAP participants, rate of food insecurity among free

and reduced-price meal school children, and perceived quality of life and access to nutritious and sufficient food.

Communication and Engagement

1. Both parties will attend all regularly scheduled quarterly Neighborhood Nutrition Board Meetings and Neighborhood Nutrition Advisory Board Meetings.
2. Both parties will attend Mobile Market Steering Committee meetings upon invitation and at least (3) Neighborhood Nutrition Town Hall meetings annually.
3. Both parties will identify their preferred means of communication and respond within 72 hours (operating business days only).

Terms and Conditions

Effective Dates and Renewal of Agreement

This MOU will go into effect as of May 1, 2021 and will remain in effect for 5 years unless notice of termination is given by either party. This MOU may be renewed/extended by the written consent of both parties.

Termination of Agreement

This MOU may be terminated by either party. The terminating party must provide written notice of termination at least 365 days prior to the termination date. The termination of this MOU does not cancel out any prior activity agreements or promised funds within the same fiscal year.

Amendment of Agreement

This MOU may only be amended with the written consent of both parties, and any amendments must be agreed up in writing by both parties.

ACC Milestones, Goals, and Metrics

Milestones

1. Establishment of Board of Directors by the ACC's Leadership Team.
2. Creation of the Neighborhood Nutrition Advisory Board, Mobile Market Steering Committee, partnerships, collaborations, and volunteer database.
3. Initial Neighborhood Nutrition Board Meeting to introduce and celebrate creation of ACC, discuss year goals and objectives, clarify engagement/expectations, and Mobile Market launch.
4. Mobile Market program development of vendors, locations based on community need, and implementation plan.
5. Initial Neighborhood Nutrition Town Hall meeting to introduce and celebrate Mobile Market program to Cumberland County residents.
6. Mobile Market program evaluations for quarterly Neighborhood Nutrition Board Meeting
7. Year-In Review (Annual Report) and collaborate for Pathways for Prosperity Summit

Metrics and Goals

In Cumberland County, 13% of low-income residents do not live close to a grocery store (State of the County Health Report, 2019). 16% of residents lack constant access to a reliable food supply, including, but not solely focused on, fruits and vegetables, in Cumberland County (State of the County Health Report, 2019).

Goal: Decrease the percentage of people who are low-income that are not near a grocery store from 7% to 5% (State of the County Health Report, 2019).

- Immediate: Increase access to healthy foods in childcare, schools, churches, workplaces, and other community-based settings through the Mobile Market.

- Long-term: Increase the number of community or small retail venues providing access to healthy foods by partnering with vendors such as local farmers, Walmart, and Food Lion.

30.7% of children ages 2–4 who receive WIC and are classified as either overweight or obese in Cumberland County (State of the County Health Report, 2019). 20.9% of children ages 0–17 are food insecure in Cumberland County (State of the County Health Report, 2019).

Goal: Decrease the percentage of overweight or obese people who are low-income and receive WIC or SNAP benefits by 20%.

- Immediate: Provide SNAP education through Mobile Market initiatives and partnerships with childcare, schools, churches, workplaces, and other community-based settings.
- Long-term: Decrease food insecurity by building sustainable structures for affordable, healthy food supply in every major low-income neighborhood.

Contact Information:

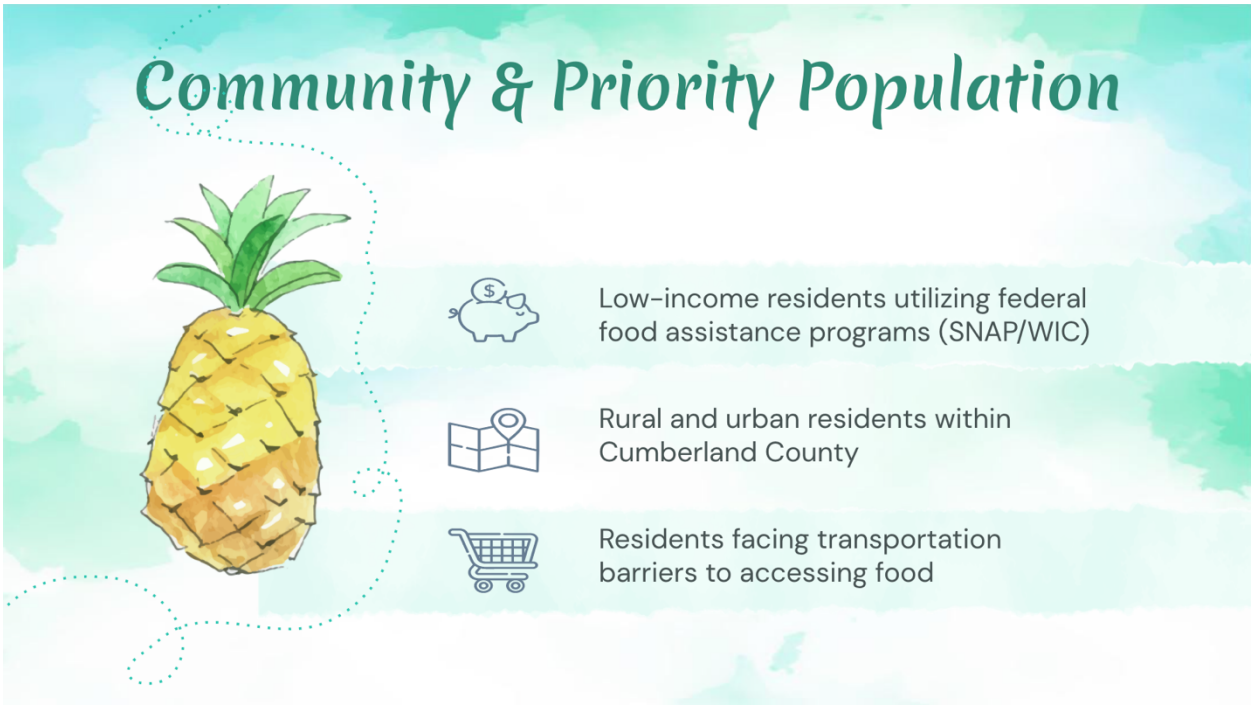
Pathways for Prosperity Leadership Team
Fayetteville, NC 28301
Pathwaysforprosperity@gmail.com

Accountable Care Community of Cumberland County: Mobile Food Market Program
Anthony Campbell
Board Chair
123 Main Street, Fayetteville, NC 28303
anthonycampbell@accmobilefoodmarket.com

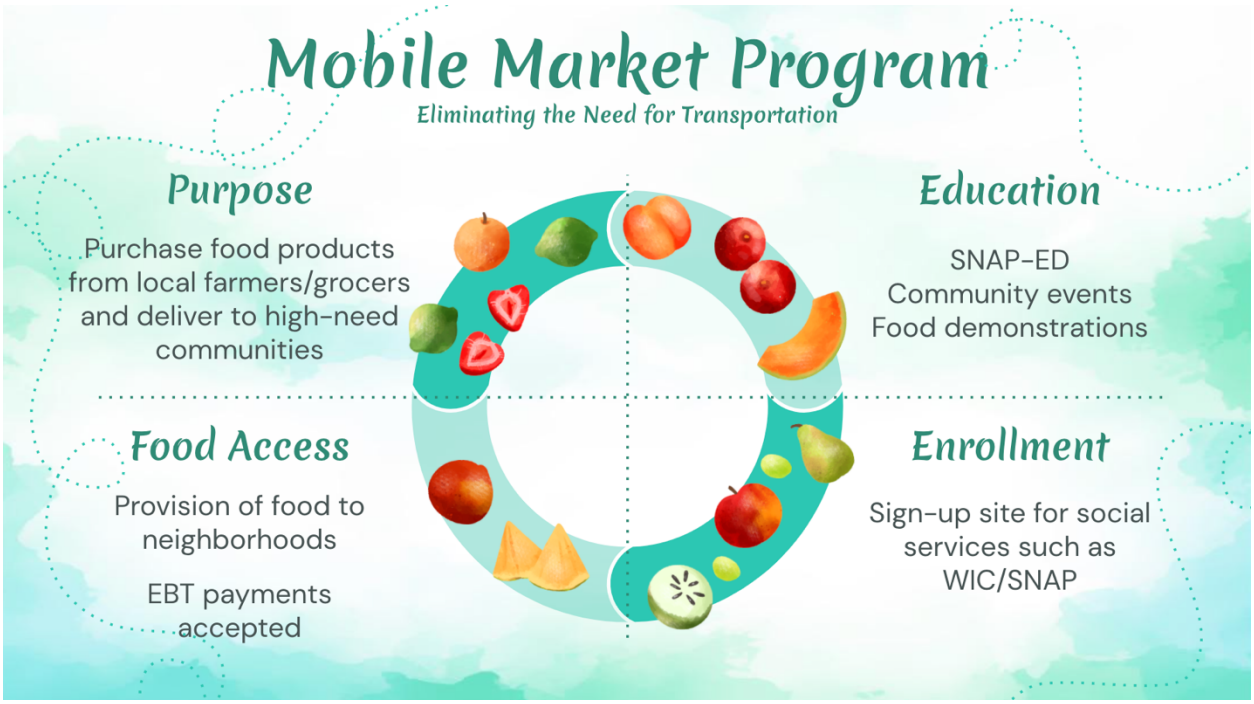
_____Date: 04/01/2021 (Partner signature)
(Partner name, organization, position)

_____Date: 04/01/2021 (Partner signature)
(Partner name, organization, position)

All in the Neighborhood Persuasive Pitch Presentation



Our program will be accessible to all Cumberland County residents. However, based on the Community Health Needs Assessment and County Reports, the priority population that we hope to reach are low-income residents living both rural and in urban areas that face the greatest transportation barriers to accessing food. Specifically, the economically stressed families of Cumberland County utilizing federal food assistance programs.



To better serve high need-communities and residents facing transportation barriers to obtain food, we propose a one-stop-shop Mobile Food Market to eliminate the need for transportation to access sufficient and nutrition food. To identify high-need communities we will partner with the CCDSS to build up a customer base and promote buy-in of our program. The market will operate as a business and purchase products from local growers and grocers, unlike other MFM programs that rely solely on donations.

This program has three pillars. The first pillar is education, to provide SNAP-ED, engage community members through Mobile Food Market events and also spotlight food demonstrations and recipe-sharing led by leaders in the community. The second pillar is food access, the actual delivery of WIC-authorized foods to high need communities. WIC and SNAP electronic benefits transfer (EBT) payments will also be accepted for all food products. The third pillar is enrollment, ensuring the allocation of social service resources by providing sign up stations on site at the Mobile Market for WIC/SNAP enrollment.

I would like to take this time to switch gears to the key stakeholder portion of our presentation and welcome our distinguished guests who have taken time out of their day to join us. Specifically, I'd like to welcome The Pathways for Prosperity Coalition, led by Fayetteville City Councilman Larry Wright and North Carolina Senator Kirk deViere. Welcome!

Importance: The Pathways for Prosperity Coalition is comprised of 29 community assets and organizations. Your coalition focuses on breaking barriers that influence generation poverty surrounding Early Childhood Education, Quality K-12 Education, Life Skills, Affordable Housing, and Workforce-Industry Alignment. As a key stakeholder, Pathways for Prosperity can also provide insight surrounding existing partnerships and programs to address poverty in Cumberland County as well as highlight successful efforts, lessons learned, and identified gaps.

Involvement: Collaboratively, we will develop an additional focus area to your coalition, Neighborhood Nutrition, to jointly develop a set of objectives and strategies to support measurable improvements. We will coordinate with the ACC Leadership Team and Board of Directors to help facilitate your summit event, convening 250 local leaders and community members. This summit will share data improvements and program updates, allow stakeholders to engage with community members and Mobile Market users, and present future directions and implications to create and maintain positive change. We hope to obtain your insights into the needs of community members based your community assessment surveys that analyzed poverty and access across Cumberland County.

Proposed Impacts: Together, we will aim to decrease the percentage of low-income residents that report they are not near a grocery store from 7% to 5%, as outlined in the 2019 State of the County Health Report. We also want to provide you with our full support to help you continue the work that has already been started by local leaders and community members. We would be honored to obtain your support to aid us in reaching high-need communities to address barriers surrounding food insecurity and accessibility.

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Appendix C: Tables and Figures

Table 2. Stakeholder Analysis Map

Stakeholder	Organization	Stakeholder Interest
Cumberland County residents and grassroots stakeholders	Program: low-income, urban and rural residents of Cumberland County receiving nutrition government assistance as well as local farmers and grocery store managers Policy: low-income, urban and rural residents of Cumberland County who face transportation barriers	• Ya Ya Gas Station manager • Super Beauty World manager • Trimmerz Barbershop manager
Ifetayo Farrakhan Program Director	Policy and Program: Cumberland County Community Transportation Program	The mission of the Community Transportation Program is to provide safe, dependable, accessible and affordable transportation to Cumberland County residents.
Public Transportation Division	Policy: North Carolina Department of Transportation	Aims to safeguard human and environmental health through prevention, protection, and educations efforts. To promote health and prevent disease in the school, home and community through the management, consultation, development, execution and evaluation of plans that impact student health. The Cumberland County Department of Public Health's School

		Health Program works collaboratively with the Cumberland County School System to deliver these high-quality services in a manner that is equitable, impactful and evidence based. Our goal is to grow our team to have one Nurse in every school, every day, to ensure that the health and wellness needs of students are met and as a result, their education is positively impacted.
Dr. Jennifer Green Director	Policy and Program: Cumberland County Public Health Department Health Services Program: Cumberland County Public Health Department School Health Program	
Serve Team Welcome Team	Program: The Manna Dream Center	The Manna Church Dream Center is a part of the DC Network which along with other Dream Centers around the country serves as a resource center focused on providing support to those affected by homelessness, hunger, addictions and the lack of education through residential and community outreach programs.
Tammy Hyde, Communications/Community Engagement Coordinator	Program: The Fayetteville Child Advocacy Center	Provides comprehensive services to children and families.
Women's Giving Circle of Cumberland County	Policy and Program: Cumberland Community Foundation, Inc.	The Women's Giving Circle of Cumberland

		County awards high-impact grants to projects focusing on women and children in Cumberland County, N.C.
Donya Campbell, Community Center Director	Policy and Program: The Salvation Army Community Center Red Shield Club	The Salvation Army's Red Shield Club offers children and senior citizens educational, recreation and spiritual resources to meet their physical, social, academic and spiritual needs. Here, they acquire the necessary tools and attributes to be healthy, self-sufficient and productive citizens.
Cumberland County Board of Commissioners Fayetteville Mayor, Mitch Colvin	Policy and Program: Cumberland County Government	Colvin doesn't hide from the fact that he is a product of one of Fayetteville's poorest neighborhoods. Colvin began to make good on a campaign pledge to bring nutritious, reasonably priced food to the Murchison Road corridor. For years, the corridor had been federally labeled as a food desert, one without a grocery store. To combat the problem, Colvin and others worked on a partnership between the city and Fayetteville State University to bring a farmer's market to the community. Six months after his election, the farmer's market opened. By the fall of the same

		year, Walmart had submitted plans to open a neighborhood store on Murchison Road. This Walmart recently shut down due to the high crime of employees and customers shoplifting food.
Shayla Bannister, Director of Operations	Program: Cumberland County Public Schools Child Nutrition Services – Summer Food Service Program	Our goal is to provide quality meals through quality services to our customers in the schools in this district. The Summer Food Service Program (SFSP) is a federally funded, state-administered program. SFSP reimburses program operators who serve free healthy meals and snacks to children and teens in low-income areas.
Tyffany Neal, Assistant Transit Director Advisory Committee	Policy: Fayetteville Area System of Transit (FAST) .	To address the public transportation needs of Fayetteville North Carolina in a proactive way by providing recommendations to City council, management, users and the general public in an effort to create a comprehensive and cohesive transit system that responds to our community's present and future needs
Crystal Black, Assistant Director of Adult Services	Policy: Cumberland County Department of Social Services – Transportation Services	Medicaid Transportation services are available for Medicaid beneficiaries

		that have been assessed by their Medicaid caseworker and found in need of transportation for doctor appointments and other medically related transportation. These services are provided within and outside of Cumberland County (Duke Hospital system and UNC Chapel Hill Hospital system, etc.) and are free to the Medicaid beneficiary. Prior approval is required for all transportation trips outside of Cumberland County. Services are provided by the most cost-effective method via FAST buses, County vehicles, personal vehicles and contract vehicles. Cumberland County Medicaid Transportation provides fee pay services for non-Medicaid customers for out of county transportation.
Serve Team Praise Team	Program and Policy: Kingdom Impact Global Ministries	Serves as the heart of eastern Fayetteville and safe haven for a high volume of minority residents in Cumberland County.
Michael Gibson, Director Crystal Glover Seabrook Recreation Center Manager	Policy and Program: Fayetteville-Cumberland Parks and Recreation	Services comprehensive physical and social services to improve health and quality of life for Cumberland County residents.

Fayetteville-Cumberland Colleges and Universities Seabrook Auditorium Director	Policy and Program: Fayetteville State University, Methodist University, Fayetteville Technical Community College	

Figure 2. Power Analysis Map

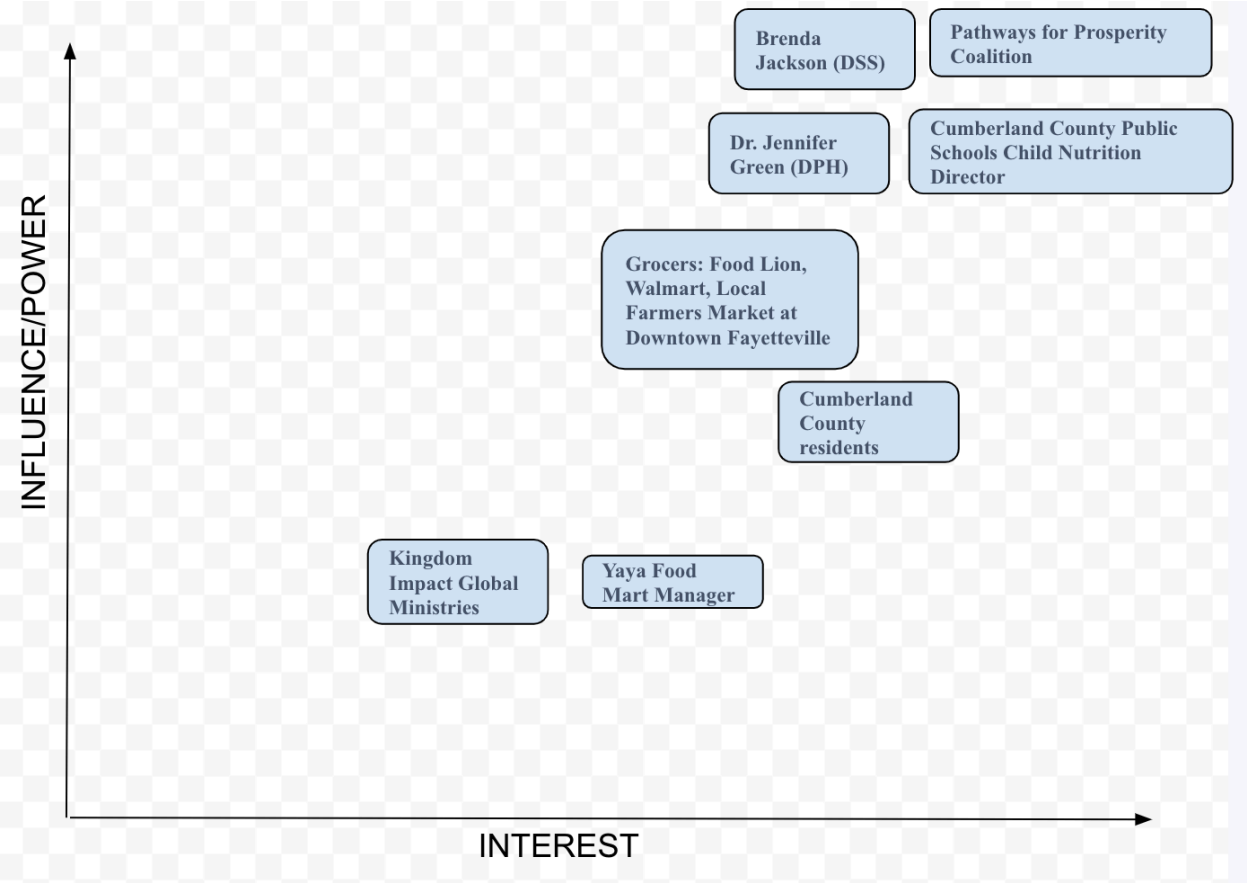

Table 3. Power Analysis Grid

High Influence/Low Interest **Meet their needs** • Michael Gibson • Fayetteville-Cumberland Colleges and Universities	*High Influence/High Interest* **Key Player** • Mayor Mitch Colvin • Dr. Jennifer Green • Ifetayo Farrakhan • Cumberland County Board of Commissioners • North Carolina Department of Transportation • Shayla Bannister • Fayetteville Area System of Transit Advisory Committee
Low Influence/Low Interest **Keep informed minimally** • Woman's Giving Circle of Cumberland County • The Manna Dream Center • Tammy Hyde • Donya Campbell	*Low Influence/High Interest* **Show consideration** • Crystal Black

Table 4. Give-Get Grid

Stakeholder	Organization	Gives	Gets
Cumberland County residents	Program: low-income, urban and rural residents of Cumberland County receiving nutrition government assistance as well as local farmers and grocery store managers Policy: low-income, urban and rural residents of Cumberland County who face transportation barriers	Lived experiences with transportation and food access Farmers experiences as local growers in the community and innovate ways to build partnerships Insight on grocery store challenges to providing access and expansion	Insights into the system and how to overcome barriers. Potential for addressing some of the barriers he is experiencing and gaps for potential solutions.
Ifetayo Farrakhan Program Director	Policy and Program: Cumberland County Community Transportation Program	Insight on providing safe, dependable, accessible and affordable transportation to Cumberland County residents.	Enhanced understanding of root causes and symptoms of transportation barriers in Cumberland County. Opportunity to dialogue and partner with other stakeholders. Support for their mission by

			developing long-term solutions.
Public Transportation Division	Policy: North Carolina Department of Transportation	Insight on how to collaborate to deliver these high-quality services in a manner that is equitable, impactful and evidence based.	Enhanced understanding of root causes and symptoms of transportation barriers in Cumberland County. Opportunity to dialogue and partner with other stakeholders. Support for their mission by developing long-term solutions.
Dr. Jennifer Green Director	Policy and Program: Cumberland County Public Health Department Health Services Program: Cumberland County Public Health Department School Health Program	Organizational resources: for example, research, data collection/analysis, and data-driven strategies. Training/education to assist with capacity building within communities (cultivating leaders/champions, assisting caseworkers). Systems for community alliances.	Opportunity to dialogue and partner with other stakeholders. Support for the organization's mission by developing long-term solutions.
	Program: The Manna Dream Center	Help provide support to those affected by homelessness, hunger, addictions and the lack of education through residential and community outreach programs.	Another partner (us) to aid in achieving departmental goals (helping provide access and

			comprehensive care)
Tammy Hyde, Communications/Community Engagement Coordinator	Program: The Fayetteville Child Advocacy Center	Provide comprehensive services to children and families.	Help in supporting the children who are most in need within program.
Women's Giving Circle of Cumberland County	Policy and Program: Cumberland Community Foundation, Inc.	Provide grant funding to projects focusing on women and children in Cumberland County, N.C.	Sponsorship marketing
Donya Campbell, Community Center Director	Policy and Program: The Salvation Army Community Center Red Shield Club	Help assist with educational, recreation and spiritual resources to meet their physical, social, academic and spiritual needs of community members.	Help in supporting the children who are most in need within school program.
Cumberland County Board of Commissioners Fayetteville Mayor, Mitch Colvin	Policy and Program: Cumberland County Government	Colvin is a product of one of Fayetteville's poorest neighborhoods. Provide knowledge and expertise from previous work on a partnership between the city and Fayetteville State University to bring a farmer's market to the community.	Additional support and resources, a chance to make an impactful difference that has already been started by his administration.
Shayla Bannister, Director of Operations	Program: Cumberland County Public Schools Child Nutrition Services – Summer Food Service Program	Provision of quality meals through quality services to our customers in the schools in this district.	Help in supporting the children who are most at risk and in need based on collaboration with school system
Tyffany Neal, Assistant Transit Director Advisory Committee	Policy: Fayetteville Area System of Transit (FAST)	Help address the public transportation needs of Fayetteville North Carolina in a proactive	Help in supporting individuals who are most at risk

	.	way by providing recommendations to City council, management, users and the general public in an effort to create a comprehensive and cohesive transit system that responds to our community's present and future needs.	and in need of transportation.
Crystal Black, Assistant Director of Adult Services	Policy: Cumberland County Department of Social Services – Transportation Services	Help expand Medicaid Transportation services available for Medicaid beneficiaries that have been assessed by their Medicaid caseworker and found in need of transportation for doctor appointments and other medically related transportation.	Help in supporting individuals who are most at risk and in need.
	Program and Policy: Kingdom Impact Global Ministries	Insight on the needs of community members as the heart of eastern Fayetteville and safe haven for a high volume of minority residents in Cumberland County.	Another partner (us) to aid in reaching a large range of communities.
Michael Gibson, Director	Policy and Program: Fayetteville-Cumberland Parks and Recreation	Help provide services comprehensive to the physical and social services to improve health and quality of life for Cumberland County residents.	Another partner (us) to aid in achieving departmental goals (helping provide access and comprehensive care)
Fayetteville-Cumberland Colleges and Universities	Policy and Program: Fayetteville State University, Methodist	Insight on the needs of community members as the heart of eastern Fayetteville and safe haven for a high volume of	Another partner (us) to aid in reaching a large range of communities.

	University, Fayetteville Technical Community College	minority residents in Cumberland County.	

Table 5. RASCI Stakeholder Matrix for Program Intervention

RASCI Levels		
Who is ...	Program Transformation	Rationale for Partner Participation
Responsible = owns the problem/project	Cumberland County Department of Social Services (Brenda Jackson)	Opportunity to dialogue and partner with other stakeholders. Support for the organization's mission by developing long-term solutions. Help provide services comprehensive to the physical and social services to improve health and quality of life for Cumberland County residents.
Accountable = ultimately answerable for the correct and thorough completion of the deliverable or task, and the one who delegates the work to those responsible	Grocers: Food Lion, Walmart, Local Farmers Market at Downtown Fayetteville Cumberland County Public Health Department School Health Program Cumberland County Department of Social Services	Farmers experience as local growers in the community and innovate ways to build partnerships as vendors for the Mobile Market. Insight on grocery store challenges and provide access and expansion via our Mobile Market program.
Supportive = can provide resources or can play a supporting role in implementation	Pathways for Prosperity Coalition: • Action Pathways Inc.	Insights into the system and how to overcome barriers.

	• Alpha Kappa Alpha • Boys & Girls Club of Cumberland County • Carolina Collaborative Community Care (4C) • Center for Economic Empowerment and Development • Communities in Schools of Cumberland County • Community Interagency Council--Quality Education (CICQuE) • Cumberland Community Foundation • Delta Sigma Theta • Fayetteville Area Habitat for Humanity • Fayetteville Cumberland Re-Entry Council • Fayetteville Metropolitan Housing Authority • Fayetteville PACT • Fayetteville Rotary Club • Fayetteville State University • Fayetteville Technical Community College • Fayetteville/CC Economic Development Corporation • Giving Hands Association • Greater Fayetteville Chamber of Commerce	Lived experiences surrounding food access. Potential for addressing some of the barriers the community is currently experiencing and gaps for potential solutions. Insight on the needs of community members as the heart of eastern Fayetteville and safe haven for a high volume of minority residents in Cumberland County.

	• Greater Fayetteville United • Kingdom Community Development Corporation • Latino Community Connections • Latinos United for Progress • Methodist University • NAACP—Fayetteville Branch • North Carolina Justice Center • Partnership for Children of Cumberland County • Sustainable Sandhills • United Way of Cumberland County Kingdom Impact Global Ministries Cumberland County Public Schools Child Nutrition Director Yaya Food Mart Manager	
Consulted = has information and/or capability necessary to complete the work	Cumberland County Public Schools Child Nutrition Director	Provision of quality meals through quality services to our customers in the schools in this district. Help in supporting the children who are most at risk and in need based on collaboration with the school system.
Informed = must be notified of results, process, and methods, but need not be consulted	Cumberland County Public Schools Child Nutrition Director	Another partner (us) to aid in reaching a large range of communities.

	Pathways for Prosperity Coalition	Additional support and resources, a chance to make an impactful difference that has already been started by local leaders.

Table 6. Method of Engagement

Method of Engagement	Stakeholders	Input on…	Involvement
(1) Neighborhood Nutrition Board of Directors & Board Meetings	Board of Directors: 1 representative from the advisory board, 1 representative from the steering committee, and two external community members from monthly town hall meetings Board Meetings: All stakeholders	• Quarterly reports • Mobile Market progress • Data collection • Decisions compiled by the advisory board based on steering committee meetings and town halls	Every 3 months
(2) Neighborhood Nutrition Advisory Board	High power, high interest stakeholders	• Process and methods • Technical advice • Effectiveness of the program through steering committee monthly reports • Assessment process by evaluating factors and gaps that may impact the success of the Mobile Market	Every 2-4 months

		• High-level input and guidance to the steering committee • Monthly evaluation and feedback sessions with the steering committee chair	
(3) Mobile Market Steering Committee	High/low power and high interest stakeholders Faith leaders, grassroots stakeholders, community advocates	• Brainstorm ideas to address health concerns and propose community solutions • Funding and Community Resources • Neighborhood Nutrition Town Halls • Data Collection and Reporting (Dialogue Groups	One-time events, presentations, workshops, webinars, story projects, etc. Re-occurring meetings (ongoing) 1:1 Check-Ins as needed
(4) Neighborhood Nutrition Town Halls	Diverse group of internal and external experts MFM participants, community members, and stakeholders	• Gaps and opportunities for action • Community input on prioritizing strategies • Define success • Vocalizing community challenges • Mobile Market impacts on community health • Building community rapport and trust • Provide updates to community members	Once a month

APPENDIX D: ANNA FISHER'S INDIVIDUAL WORK

Individual Problem Statement

Social Determinant of Health (SDOH)

The Social Determinants of Health (SDoH) framework addresses factors, such as where you are born, grow, live, and work, that contribute to one's health and wellbeing (Healthy People 2020, n.d.). The goal of the framework is to understand the different social and physical environments that contribute to one's health status. One of the four overarching goals of Healthy People 2020 is to "Create social and physical environments that promote good health for all". Economic stability, neighborhood and built environment, education, good, and community and social context are the factors that make up the Social Determinants of Health framework (Healthy People 2020, n.d.).

The Neighborhood and Built Environment as a determinant is the housing, transportation, safety, walkability, parks and playgrounds, sidewalks, and zip code of a community. There is significant evidence of the relationship between neighborhoods and health (Diez, 2016). One's zip code, built environment, and community are greater predictors of health and our genetic makeup (Healthy People 2020, n.d.). Reliable transportation is a crucial component of a healthy lifestyle. Communities that are safely walkable, bike-friendly, and provide public transportation are associated with healthier populations (Designing activity-friendly Communities, 2020). These communities provide outlets for physical activity but also easier access to healthy foods and health care. Improving transportation access will have a domino effect on other health behaviors, systems, and policies that will then lead to better health outcomes for all (Healthy People 2020, n.d.). Specifically, this report will focus on the availability and accessibility of transportation within this community affecting access to healthy and affordable foods.

Geographic and Historical Context

Cumberland County is located in the southeastern section of North Carolina, the Coastal Plain region with a land area of 652 square miles. It is bordered by Sampson, Bladen, Robeson, Hoke, Harnett, and Moore counties. The community was first settled by Highland Scots in the late 1720s and remained mostly undeveloped until 1919 in which construction on Camp (later Fort) Bragg began (Vocci, 2006). The community of Fayetteville quickly grew as the military base became one of the largest in the country. This military base serves as the major driving force for the Cumberland County economy and is the largest employer in the county (Cumberland County, 2019). Fayetteville is the county's largest town, other municipalities include Eastover, Falcon, Godwin, Hope Mills, Linden, Spring Lake, Stedman, and Wade.

The current population of Cumberland County is 327,127 residents and has grown in recent years. There is a higher population of younger residents compared to the rest of the state, which may be due to the military base attracting young adults to the area. The median income for residents is $44,810 compared to the state average of $48,256 (Cumberland County, 2019). Poverty and economic disparity is a key issue in the county; 17.6% of residents live below the poverty line, which is greater than the state average of 18.6% (Cumberland County, 2019). The race and ethnicity composition of Cumberland County is 38.7% Black, 51.8% White, and 11.3% Hispanic or Latinx. According to the 2019 Community Health Assessment, the significant health needs for the community are access to health services, economy, and exercise, nutrition, and weight.

Priority Population

The priority population for this report are low-income residents of Cumberland county living both rurally and in urban areas that face the greatest transportation barriers to accessing

food. The economically stressed families of Cumberland County, specifically those utilizing federal food assistance programs. In Cumberland County, 54.9% of households with children receive Supplemental Nutrition Assistance Program (SNAP) benefits (Cumberland County, 2019). SNAP is the nation's largest food assistance program and it provides financial benefits to low-income families that can be used to purchase food. SNAP beneficiaries must be able to access grocery stores, corner stores, or the one Farmer's Market serving unprepared food products such as fruit, vegetables, meat, fish, cereals, pasta, and milk. SNAP benefits cannot be used to purchase hot or prepared food items, alcohol, or any non-food items (USDA, 2020). These families may have direct access to the highly dense fast-food options in Cumberland County, however, not be able to use their benefits to these food items because they are prepared, hot foods (USDA Food Environment Atlas, 2015).

Measures of Problem Scope

According to the USDA Food Environment Atlas, 96% of Cumberland County has low access to a grocery store. However, the county has many fast-food options (0.83 per 1,000 people) (USDA Food Environment Atlas, 2015). Access to grocery stores is limited and not equitable to all areas within the county; many residents rely on personal transportation to access food (Cumberland County, 2019). There is currently only one Farmer's Market serving all 327,127 residents of Cumberland County.

Components of transportation within a community include public transportation (busses, rail lines) sidewalks, and walkability. Fayetteville Area System of Transit (FAST) is the city of Fayetteville's public transportation system. Service is provided Monday – Friday 5:30 AM to 10:30 PM and Saturday from 7:30 AM to 10:30 PM. There are 27 fixed-route buses and 19 routes. Despite this transit system, many residents of Cumberland County rely on their personal

vehicles for transportation to work and throughout the community (Fayetteville Area System of Transit, n.d.). Rural residents make up about 13% of the total population of Cumberland County (NC Department of Commerce, 2021). Those living in rural areas have reduced health outcomes of their suburban counterparts (Knopf, 2019). Those living rurally in Cumberland County do not readily have access to the FAST transit system and have to rely on personal transportation to access grocery stores or markets.

Rationale/Importance

The current public transportation system limits access for both urban and rural residents of Cumberland County. It requires residents to have a personal vehicle or flexible hours to access grocery stores, which is very important for residents utilizing SNAP benefits to purchase food for their families. Limited access to these resources has resulted in poor health outcomes among these specific populations in Cumberland County when compared to both affluent residents of Cumberland County living in larger metropolitan areas and to residents of other North Carolina counties (Cumberland County, 2019).

Disciplinary Critique

Poor nutrition has been linked to chronic conditions including overweight, obesity, heart disease, stroke, Type 2 diabetes, and cancer (Center for Disease Control 2021). Recognizing root causes of nutrition-caused illness is the expertise of public health nutrition professionals. To achieve health equity within this community, nutrition professionals must address the factors that contribute to poor health outcomes. Increasing transportation access is a crucial component for residents of Cumberland County to access healthy, affordable food (Cumberland County, 2019). Research has shown that social and economic factors and one's physical environment contribute to about 50% of the variation in health outcomes across counties, whereas the current healthcare

system accounts for only 20% of the variation in health outcomes (Braveman & Gottlieb, 2014). Addressing these factors means looking both at and outside of the healthcare system to develop nutrition focused policies and programs that promote health and health equity.

Program and Policy Analysis

Background

Rural and low-income residents of Cumberland County face transportation barriers to accessing healthy foods due to limited public transportation and location of grocery stores throughout the county. In Cumberland County, 54.9% of households with children are receiving Supplemental Nutrition Assistance Program (SNAP) benefits (Cumberland County, 2019). The food insecurity rate for Cumberland County is 19%, which is higher than the state and national average (Cumberland County, 2019). According to the USDA Food Environment Atlas, 96% of Cumberland County has low access to a grocery store. However, the county has many fast food options (0.83 fast-food sites per 1,000 people) (USDA Food Environment Atlas, 2015). This describes a food swamp, or an area with a high-density of retailers selling high-calorie fast food and processed foods (Cooksey-Stowers et. al., 2017).

Access to grocery stores is limited and not equitable to all areas within the county; many residents rely on personal transportation to access food. The Fayetteville Area System of Transit (FAST) is the current public transportation system in place in Cumberland County, however, it is not effectively reaching all rural and high-need residents. Improving transportation access has a domino effect on other health behaviors, systems, and policies that will then lead to better health outcomes for all (Healthy People 2020, n.d.). Addressing transportation barriers at the individual and community level is key in reducing food insecurity in Cumberland County, North Carolina.

Purpose

We propose a Mobile Market Program and Public Transportation Policy to address the transportation barriers contributing to high rates of food insecurity in Cumberland County. Both the program and the policy reduce barriers that residents may have in accessing healthy food. We

chose a mobile food market program because it is an efficient and cost-effective strategy to distribute healthy, affordable food directly to residents facing transportation barriers. Mobile Food Markets are evidenced based in North Carolina; examples of similar programs are located in Wake, Pender, and Greensboro county. The Mobile Market directly connects residents to food in their neighborhoods while the Public Transportation Policy uses a downstream approach to reduce transportation costs that may lead to better jobs, reduced rates of poverty, access to grocery stores which all result in reduced food insecurity.

Strategies and Activities

To address transportation barriers to accessing healthy foods for Cumberland County residents, we propose a Mobile Market Program that will travel to rural and urban neighborhoods with high-need and restricted access grocery stores. As previously identified, 96% of residents in Cumberland County have low access to a grocery store but a surplus of fast-food options (USDA Food Environment Atlas, 2015). There is currently only one Farmer's Market serving all 327,127 residents of Cumberland County. This proposed program targets all residents, adults, seniors, and families of Cumberland County with low access to fresh foods and grocery stores. The program will specifically incentivize residents that utilize government nutrition assistance programs such as the Supplemental Nutrition Assistance Program (SNAP) or the Special Supplemental Nutrition Program for Women, Infant and Children (WIC).

The mobile market will travel to identified communities and neighborhoods using county data of residents enrolled in government nutrition assistance programs, income level, and community need. We will use community input to determine a reliable schedule for the market to visit different neighborhoods at predetermined locations. The program will utilize nutrition incentive programs to increase participation and ensure equitable access. Examples of these

programs include Double Up SNAP Bucks or WIC and Seniors coupons in addition to accepting Electronic Benefit Transfer (EBT) payments. The mobile market will include locally grown produce as well as food items that meet the requirements of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). The program will partner with DHS and WIC clinics to utilize an educational component, similar to SNAP-Ed, to ensure the success and sustainability of program participants.

In addition, we propose a Transportation Access Policy which will mandate existing transit programs to provide reduced-cost passes for rural and urban low-income residents that participate in government assistance programs. This will be accomplished by providing SNAP and WIC recipients with free or reduced FAST passes to improve access to public transportation. These ride vouchers will improve access not only to the mobile market but can be used to reduce barriers for employment, healthcare appointments, WIC visits, or grocery stores. The Transportation Access Policy will also encourage FAST to ensure bus lines travel to grocery stores and designated mobile market stops.

The program and policy will address transportation barriers at the individual and community level to food insecurity in Cumberland County, North Carolina. At the individual level, the mobile market will travel to rural and urban high-need neighborhoods. This will allow for direct access to families and individuals to access local and fresh foods. The mobile market will foster a sense of community by visiting local neighborhoods, working with local growers, and employing local residents to run the program. The transportation policy will work from the community level to increase access to a variety of resources for residents.

The target population is the significant number of residents in Cumberland county with low access to fresh foods and grocery stores. Both the program and policy intend to reach all WIC and SNAP beneficiaries.

Outcomes

Long-term Impact: The Mobile Market Program and Public Transportation Policy will increase access to healthy, local foods for low-income and rural residents of Cumberland County. The program will support long-term structural change through policy, zoning, or the development of new grocery stores through increased awareness at the government level of food insecure communities and barriers that residents face in accessing food.

Short-term Impact: By Summer 2022, 25% of individuals or families that utilize government assistance programs will have utilized the Mobile Market Program. This number was developed based on participation rates for other mobile market programs in North Carolina. Residents of Cumberland County that participate in the Mobile Market Program will report increasing their consumption of fruits and vegetables by 2 servings a week by Summer 2022.

Stakeholders

The first step in developing the Mobile Market Program is engaging with the community. It will be crucial to have community support and buy-in for the success of the mobile market. Once target communities and neighborhoods are identified, the program will survey neighborhoods to ask residents if they are interested in our program, what foods would be most important to the source, and what questions or concerns they have with the mobile market program. The Mobile Market will develop a strong partnership with the existing Farmers Market of Fayetteville. This will help to find local growers interested in selling to the Mobile Market as well as to inform what food items sell best for this community.

The Department of Transportation and FAST will be key stakeholders for the Public Transportation Policy. We will work with the Chamber of Commerce to include both business and government when amending FAST transit routes. We hope to partner with local businesses to include them in new transit routes as well as potential retailers for the mobile market. In addition, the Department of Human Services will provide necessary information to determine which neighborhoods are the most high-need and have the highest rates of participation in nutrition assistance programs.

Budget

Local and state grants will support both the program and policy in addition to already existing federal, state, and local resources. The transportation policy will be overseen by the Cumberland County Department of Transportation and work with FAST, who will be responsible for marketing the policy and distributing the free and reduced-price bus passes. FAST will utilize existing staff as well as an AmeriCorps Service Member to support the policy. The stipend for the AmeriCorps service member will come from the Department of Transportation's budget.

Grant support will be utilized for the significant start-up fees for the Mobile Market program. These initial costs will cover purchasing the vehicle, building the interior to include refrigerators and produce storage, and labeling the truck. All equipment necessary for cleaning, marketing materials (signage), and point-of-sale systems will be purchased with the start-up funds. The program will hire two permanent staff and utilize two American Corps Services members. These salaries will be included in the yearly recurring budget along with insurance, fuel, and maintenance costs.

Advantages and Disadvantages

A disadvantage of the mobile market is that it is a short-term solution to the greater issue of equitable food access for residents of Cumberland County. However, the program has a direct impact on residents by increasing access to healthy foods while also benefiting the local economy through purchasing foods from local growers. The initial start-up fees, yearly recurring salaries, and maintenance contribute to the overall high cost of the program.

The public transportation policy uses a downstream approach to impact widespread benefits in Cumberland County by reducing transportation barriers for low-income individuals. The policy requires buy-in from larger organizations and institutions that may take a very long time to organize.

Conclusion

The Mobile Market Program in Cumberland County is an efficient and cost-effective strategy to distribute food. Of the program and policy proposed to address transportation barriers contributing to high rates of food insecurity in Cumberland County, our team determined the Mobile Market program a more efficient short-term solution to increase access to healthy foods for residents. Although the initial start-up costs are high, the program will have many positive and short-term impacts on the community. The program will ensure sustainability and success through Nutrition Incentive Programs (Double Up SNAP Bucks), nutrition education, and community engagement. The program will bring awareness to food access barriers and identify communities with the greatest need. The Market Program should work with transportation and government groups to support long-term structural change through policy, zoning, or the development of new grocery stores.

Program Implementation and Evaluation

Intervention Summary

The Cumberland County Mobile Food Market will be an Accountable Care Community (ACC) that focuses on increasing transportation access for low-income urban and rural residents in Cumberland County. The Mobile Food Market is an efficient and cost-effective strategy to distribute healthy, affordable food directly to residents in Cumberland County. Rural and low-income residents face barriers to accessing healthy foods due to limited public transportation and location of grocery stores throughout the county.

The long-term impact of the Mobile Market Program is to increase access to healthy, local foods for low-income and rural residents of Cumberland County. The program will support long-term structural change through policy, zoning, or the development of new grocery stores through increased awareness at the government level of food insecure communities and barriers that residents face in accessing food. Based on the results of current mobile food market programs in North Carolina, we developed both short- and long-term goals for our program. The short-term goals of the program are that by Summer 2022, 25% of individuals or families that utilize government assistance programs will have utilized the Mobile Market Program. Residents of Cumberland County that participate in the Mobile Market Program will report increasing their consumption of fruits and vegetables by 2 servings a week by Summer 2022. The program will address food access and transportation barriers at the individual and community levels. At the individual level, the mobile market will travel to rural and urban high-need neighborhoods, increasing direct access to foods. The mobile market will foster a sense of community by visiting local neighborhoods, working with local growers, and employing local residents to run the program.

Evaluation Plan:

Outcome Measures

The outcomes of the Mobile Market Program that will be measured are participation and reach of the program, a decrease in reported food insecurity, and an increase in reported fruit and vegetable consumption. Surveys will be used to determine changes in food insecurity and fruit and vegetable consumption. The Mobile Market will be an access point to sign up for the Supplemental Nutrition Assistance Program (SNAP) and Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) benefits and the program will track the number of residents that the program recruits for benefits.

Study Design and Data Collection

The program will utilize baseline surveys to gauge interest in the program, location, and schedule preferences as well as information on initial food insecurity rates and fruit and vegetable consumption. The mobile market program will consistently measure participation rates and the use of nutrition incentive programs such as Double Up SNAP Bucks or WIC and Seniors coupons in addition to the utilization of Electronic Benefit Transfer (EBT) payments. The program will initially identify neighborhoods and rural communities that are at the highest risk for food insecurity and access barriers. Residents of these neighborhoods will be the target audience for the initial survey, which will be answered by interviewing door-to-door and mailing the survey to residents. Survey participants will also be identified through the partnership with the Cumberland County Department of Social Services. DSS will help disseminate the initial survey to all beneficiaries of SNAP and WIC. The specific measures the initial survey will identify are food insecurity rates, fruit and vegetable consumption, food preferences, a preferred schedule for the Mobile Market (times and locations), and other key concerns that residents may

have about participation in the program. The follow-up survey will be administered at random during year four. This follow-up survey will determine any changes in food insecurity, fruit and vegetable consumption, and overall perception of health and food access. The follow-up survey will be administered at the market locations to customers as well as beneficiaries of SNAP and WIC through the partnership with DSS.

The surveys will be adapted from the validated screening tool from the U.S. Adult Food Security Survey Module developed from the U.S. Department of Agriculture Economic Research Service to identify food insecurity rates in customers. Questions from this survey can be used both for households with and without children present. Examples of questions include having enough money to purchase the food you want, skipping meals, and being able to afford balanced meals (USDA, 2000). We will amend the survey and add additional questions pertaining to fruit and vegetable consumption, food purchase patterns, and SNAP and WIC participation.

For efficient analysis, the surveys will be built in the program, REDCap. The surveys administered via door-to-door sampling will have a team member asking questions and then reporting answers on a mobile tablet directly into the REDCap survey. Participants receiving a paper copy of the survey in the mail or WIC appointments will also receive a prepaid and addressed envelope to return the survey. Team members will work to input responses by hand into the REDCap survey. A qualitative analysis of survey responses will be completed through the utilization of the REDCap software.

Key concerns for the initial survey are sampling bias and non-response bias. We understand that residents may not be interested in answering survey questions or have other barriers to completing the survey. The paper surveys administered through DSS will be translated into Spanish as well as English to prevent language as a barrier in completing the

surveys. To encourage participant response, we will offer an incentive such as a raffle entry for a prize or punch card program that allows for discounts at the market.

The mobile market will continue to record and collect data throughout the program. The number of customers, pounds of food purchased, and money spent at the market will all be recorded through the POS system. This data will be important to monitor trends, the success of the program, and areas of improvement. The mobile market staff will also note concerns, comments, and suggestions from customers to ensure the relevancy and success of the program.

Stakeholders

Key stakeholders of the program evaluation process are the Department of Social Services (DSS). DSS will support through survey dissemination and encouraging participation of the program for clients. As an access point for residents to apply for SNAP and WIC benefits, the mobile market will work closely with DSS throughout the program. The Mobile Market will be an access point to sign up for SNAP and WIC benefits and the program will track the number of residents that the program recruits for benefits.

Program Timeline

The Mobile Market Program runs over 5 years and will start in Summer 2021. The first 1.5 years will be for planning and community engagement. The baseline survey will be administered at this time. The next 1.5 years will be for a small trial of the program. The mobile market will run at a reduced scale, traveling to a small number of identified community locations. This time will be used to train the market staff members, finalize food products and find overall areas of improvement for the program. The remaining two years will be for full program expansion to reach all identified high-need neighborhoods and rural communities. At the four-year mark, the second survey will be administered to measure impact and reach of the

program.

Limitations, Strengths, Potential Advantages, and Challenges

Challenges associated with the evaluation of the mobile market primarily include the non-experimental design and risk of selection bias. The outcomes are based on observation pre- and post-market implementation, which may be influenced by other factors affecting individual behaviors. Because surveys will be administered to customers and community members at random throughout the program, data will not show changes in specific individuals' behavior but trends over time.

However, the evaluation process is iterative and allows for constant feedback and adjustment. It also uses internal data tracking from the point of sales system for some outcome measures, which limits some inaccuracies regarding transaction data. The major strength of our evaluation plan is the involvement of the community members and stakeholders starting with the evaluation planning and continuing through activities and program adjustments.

Stakeholders and Dissemination of Data

Progress will be defined through sustained participation of the mobile market throughout the program duration. It will also be measured through reduced food insecurity rates and increased fruit and vegetable consumption reported in the surveys.

Local and state grants will support both the program and policy in addition to already existing federal, state, and local resources. Grant support will be utilized for the significant start-up fees for the Mobile Market program. These initial costs will cover purchasing the vehicle, building the interior to include refrigerators and produce storage, and labeling the truck. All equipment necessary for cleaning, marketing materials (signage), and point-of-sale systems will be purchased with the start-up funds. The program will hire two permanent staff and utilize two

American Corps Services members. These salaries will be included in the yearly recurring budget along with insurance, fuel, and maintenance costs.

The data will be used to show the success of the program as well as to identify areas of greatest food insecurity and food access barriers. An annual report will be developed and shared with the Department of Transportation, Chamber of Commerce, and DSS each year of the program. Utilizing the data, the Market Program should work with transportation and government groups to support long-term structural change through policy, zoning, or the development of new grocery stores.

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Persuasive Pitch Presentation

(ANNA slide 12) We chose a mobile food market program because it is an efficient and cost-effective strategy to distribute healthy, affordable food directly to residents facing transportation barriers. Mobile Food Markets are evidenced based in North Carolina; examples of similar programs from Wake, Pender, and Greensboro county are listed here. These programs demonstrate success of MFMs in this region to reduce transportation barriers for residents to access food.

Specifically in Cumberland County, there are communities that could be considered a “food desert”, as well as areas that could be described as a “food swamp”. Both of these terms describe area in which it is difficult to buy affordable or good-quality fresh food. Food swamps are areas with a high-density of retailers and establishments that sell high-calorie fast food and processed foods, with difficult access to healthier food options (Cooksey-Stowers, et. al. 2017). Our program will work in both rural and urban communities that share these characteristics that contribute to food access barriers for residents.

(ANNA slide 15) The MFM will define success based on short-term, intermediate, and long-term impacts. Formal analyses every 2 years to determine impact and reach. Short-term impacts will be assessed within 2 years, intermediate impacts within 4-6 years, and long-term impacts within 8 years. Surveys of self-report data will be administered during the initial development phase by going door to door in identified neighborhoods and at community events. Changes in perceived food security status will be determined from these surveys and will be evaluated every two years.

The program costs associated with the MFM has some considerable startup costs, such as buying the vehicle and refrigeration, but will be relatively low cost and sustainable once it implemented. The Market will be primarily funded through current federal, state, and local streams but will also generate revenue from sales that go back into the program.

APPENDIX E: MIKAYLA KUYKENDALL'S INDIVIDUAL WORK

Individual Problem Statement

Social Determinant of Health

Traditional understanding of health has primarily focused on individual behaviors that either promote or hinder positive outcomes- getting enough exercise, eating the right food, adhering to medication instructions (Kindig & Isham, 2014). However, the public health field has expanded on this initial understanding to include the social determinants of health, which contribute about 50% of the impact on health outcomes (Kindig & Isham, 2014). Social determinants of health are "the conditions in the environment in which people are born, live, learn, work, play, worship, and age" (Healthy People 2020, n.d.). Five key areas the social determinants of health are outlined by the Centers for Disease Control and Prevention (CDC, 2020): healthcare, education, social context, economic stability, and the neighborhood and physical environment, which together provide a context for the interaction between and individual and their environment pertaining specifically to health behaviors (CDC, 2020). The social determinants of health act on multiple levels- individual, interpersonal, organizational, community, and public policy- and ultimately shape individual and community health through various interconnected systems (Artiga & Hinton, 2019).

Recognizing and addressing the social determinants of health are of utmost importance when working to improve individual and community health. Of the five key areas, the neighborhood and built environment (defined as "the connection between where a person lives…and their health and wellbeing") includes transportation (CDC, 2020). Transportation is an essential issue that has both short- and long-term health consequences (CDC, 2020). While transportation includes access to a vehicle, it also considers the ability for a person to get to

necessary resources and services safely either by personal vehicle, public transit systems, or walking and biking (Litman, 2013). In 2017, inadequate transportation was the leading cause of missed medical appointments, according to the American Hospital Association (AHA, 2017). In conjunction, people with limited access to transportation are at higher risk for food insecurity (inability to obtain healthy foods in socially appropriate ways), thus increasing their risk for a myriad of diet-related conditions (Healthy People 2020, n.d.). Vehicle-dependent transportation systems limit the ability to access resources and services, especially in economically, socially, or physically disadvantaged communities. Additionally, vehicle-dependent systems increase exposure to air pollution and decrease opportunities for physical activity (Litman, 2013).

Geographic and Historical Context

Cumberland County's history began as a riverfront distribution center due to its prime location near the Cape Fear River (Cumberland County Government, n.d.). However, the county was devastated by Civil War conflicts and was later rebuilt around Fort Bragg, the major military installation. While many people are employed by the health and education systems in Cumberland County, Fort Bragg serves as the major driving force for the Cumberland County economy as the largest employer in the county (Cumberland County, 2019). The whole population is largely dominated by active service members (10%) and veterans (19%) (Cumberland County, 2019). Additionally, Cumberland County is predominantly white but has a significant Native American population (2% of the total population) as well moderate black/African American (39% of total population) and Latinx/Hispanic populations (11% of the total population (Cumberland County, 2019).

The poverty level in the area is consistent with North Carolina rates, but several pockets of poverty, food insecurity, and severe housing issues persist throughout the county (Cumberland

County, 2019). Community residents identified access to services (including transportation) as one of their top health-related priorities, which appears to impact and be impacted by the pockets of poverty, food insecurity, and housing inadequacies (Cumberland County, 2019). Efforts to improve transportation in this area and thus to improve access to goods and services have included the Fayetteville Area System of Transit (FAST), which is the public transportation system in Cumberland County. The Home & Community Care Block Grant, the Rural Operating Assistance Program Grant, and the Community Transportation Program are all initiatives that serve to further increase access to transportation services, especially those required for healthcare needs and to accommodate residents living in rural areas, older adults, and residents experiencing disability (Cumberland County Government, n.d.).

Several modes of transportation are only readily available in larger cities within Cumberland County, mainly Fayetteville. Therefore, residents living outside of the Fayetteville city limits, particularly in rural areas, do not have access to the public transportation system and would heavily rely on Rural General Public Transportation (RGPT), funded by the Rural Operating Assistance Program Grant (FAST, n.d.). While the RGPT provides transportation to Cumberland County residents living in rural communities, it only operates on weekdays, has one-way trip fee payments, and requires proof of living in a rural area as defined by the 2000 census (Cumberland County Government, n.d.). All of these factors are potential barriers for rural residents, especially those with heavy/inflexible work schedules, economic instability, and/or inadequate access to services for determining eligibility (i.e., phone and internet services, as people living in rural areas tend to have poor service) (Perrin, 2020).

Priority Population

Rural residents make up about 13% of the total population of Cumberland County (NC Department of Commerce, 2021). Although seemingly a small proportion compared to that of the urban and suburban populations, the health outcomes among rural communities are far worse than those of urban and suburban communities (Knopf, 2019). Across North Carolina, residents of rural areas are more likely to die from nutrition-related chronic conditions, including heart disease and diabetes, than their urban counterparts (NCIOM, 2014) Further, rural areas in Cumberland County have fewer healthcare professionals and facilities, a mere two locations for social services, three Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and one farmers market; and all are concentrated in large metropolitan areas (CC DSS, n.d.).

Measures of Problem Scope

Despite comprising a small portion of the population, rural residents comprise most of the food insecure population (Laveta et al., 2015). This is particularly pertinent in Cumberland County, an area in which the whole county is considered a food desert (geographic area in which access to healthy foods is limited due to absence of grocery stores) and 30% of the county reports not having access to a grocery store (US News, 2020). Therefore, accessing healthcare, social services, and food outlets among rural residents is limited, especially for those experiencing transportation barriers. Additionally, telehealth and virtual services are becoming more widely available, making transportation less of a necessity. However, because people in rural areas tend to experience insufficient phone and internet quality, these services are still largely inaccessible (Perrin, 2020).

Although the rural population is much smaller than the urban/suburban populations, the differences in health outcomes are significant. Residents in rural communities in North Carolina

are more likely to live below the poverty threshold; have less than a high school education; and to live further away from work, food outlets, and other basic resources when compared to suburban/urban communities (Carlson, 2019).

Rationale/Importance

Because of the interconnected nature of factors contributing to health and wellbeing, inadequate transportation increases the likelihood of experiencing other issues, including food insecurity, chronic disease, economic instability, and lower educational attainment. In turn, these issues may affect access to resources, including transportation, in a continuous cycle of unmet needs (McDonald et al., 2019).

Further, the issue of transportation is riddled with disparities, as it disproportionately impacts rural communities, resulting in significantly worse health outcomes compared to urban and suburban communities (Knopf, 2019). Addressing transportation as a key issue within the social determinants of health falls within the values and principles of public health practice. (Upshur, 2002). Public health's role in combating the adverse diet-related health outcomes in the rural population of Cumberland County, North Carolina, as it relates to transportation barriers, is large and requires a collaboration of expertise from all sects of the field: nutrition, leadership, and policy.

Disciplinary Critique

More specifically, the nutrition profession play a critical role in combating the adverse health outcomes among rural residents of Cumberland County. More pressing issues, such as inadequate transportation and insufficient access to services, become barriers to achieving optimal nutrition. In Cumberland County nutrition-related conditions plague rural residents, but nutrition interventions are enhanced when these other barriers are addressed, especially

inadequate transportation. Recognizing root causes of nutrition-cased illness is the expertise of public health nutrition professionals.

Program and Policy Analysis

Background Information

The political issue of vehicle dependence is perpetuated by the major economic impact of the automotive industry on growth (Paterson, 2006). As a result, built environments (a social determinant of health), are developed around personal vehicles, failing to accommodate those in need of public transit (Mattiolo et al., 2020). North Carolina is no exception, particularly Cumberland County (Cumberland County, 2019).

Cumberland County is a prime example of a vehicle-dependent environment, disproportionately affecting specific populations. Most grocery stores, medical facilities, and social services are concentrated in Fayetteville. Food insecurity is highly prevalent throughout the county, particularly in low-income urban and rural communities (Healthy People 2020, n.d.). The burden of living in insufficient food environments is exacerbated by transportation barriers. Incidentally, low-income rural and urban communities also experience the burden of inadequate access to reliable transportation (Wolfe et al., 2020).

There is a public transit system operating currently, the Fayetteville Area System of Transit (FAST), comprised of bus routes for which passengers pay a fee. However, the system operates only in Fayetteville, depriving communities in rural geographies of public transportation; and fares make travel financially burdensome (FAST, n.d.). However, even with FAST and other initiatives, Cumberland County residents have prioritized access to resources (specifically transportation) in their community health needs assessment (Cumberland County, 2019).

Purpose

The goal of All in the Neighborhood's proposed program and policy is to improve food security and nutritional status of low-income rural and urban residents of Cumberland County via enhanced access to services and transportation systems. Given that public transportation in Cumberland County is insufficient to support its various populations, the selected program to overcome this barrier is a Mobile Food Market, similar to those in other areas in North Carolina, such as Feast Down East in New Hanover County (Feast Down East, n.d.). This market bypasses the need for transportation and instead travels to high-need communities to provide access to fresh foods, including those accepted by nutrition assistance programs. In addition to the mobile market, this group has selected a policy that serves to enhance already-existing public transportation through reduced fares and increased routes. In combination, the mobile market and transportation policy will reduce barriers posed by inadequate transportation for rural and low-income communities of Cumberland County.

Strategies and Activities

The Mobile Food Market is comprised of multiple components aimed at overcoming transportation barriers and insufficient food access for low-income rural and urban residents. First, the MFM will provide not only stock fresh produce but also foods that are accepted by the Special Nutrition Program for Women, Infants and Children (WIC), the Supplemental Nutrition Assistance Program (SNAP), and the Senior Farmers Market Nutrition Program (SFMNP). Thus, the MFM will accept electronic benefit transfer (EBT) payments and coupons from these three programs in addition to regular monetary payments. The MFM will travel to communities of high need at predetermined locations, times, and days of the week based on community feedback. Lastly, the MFM will have onsite nutrition education in various forms (UWPHI, 2020). These combined activities will provide a fresh food outlet for urban residents living in

food swamps and will serve as a major food source for rural residents in food deserts. Urban residents will experience reduced transportation barriers to food from public transit fees and inadequate routes, while rural residents will experience reduced transportation barriers to food as they pertain to extensive meal planning and food choices as a result of long distance travel and storage needs.

Implementation of the MFM will be carried out by Cumberland County's Department of Public Health with support from the Department of Social Services, representatives of communities served by the MFM, local government representatives, and local food producers. To achieve this, high-need communities and neighborhoods will be determined based on previous community health needs assessments; and public health officials will obtain feedback and suggestions via surveys and focus groups from community representatives about the educational components, food access needs, and day and location preferences of the residents. Once feedback is received, program supplies will be obtained, and schedules established.

This approach was selected to improve food access to low-income rural and urban residents immediately, while longer term solutions are developed. The MFM addresses individual, interpersonal, and organizational levels of the social ecological framework by recognizing individual access to transportation and socioeconomic status, relationships used for getting to needed services, and existing systems and programs. Not only have mobile markets proven successful in disadvantaged areas across the United States, but other counties in North Carolina have successfully implemented similar programs, indicating strong potential for success in Cumberland County (UWPHI, 2020). The program will strive to reach at least 75% of the targeted neighborhoods and 60% of the SNAP and WIC beneficiaries within these targeted neighborhood by traveling to each location every two weeks within time frames as decided

during the planning phase (Ramirez et al., 2017). However, reach will depend on initial community engagement, program retention, and ability of the market to meet target scheduling goals.

A more long-term solution is All in the Neighborhood's selected policy mandating more comprehensive transportation access for low-income rural and urban communities of Cumberland County. reduced fares for eligible passengers and increased routes for FAST. This mandate poses to enhance access via reduced public transit fares for income-eligible individuals and enhanced schedules and routes in the system in order to overcome financial- and time-related barriers of transit patrons.

This policy will be implemented following the foundation of a network between stakeholders, including the Department of Public Health, the Department of Transportation, the Department of Social Services, the Greater Fayetteville Chamber, local government officials, and community representatives. Once this network is formed, the plans for creating more routes for the transit system as well as the plans for determining eligibility for and providing free and reduced-price fares will be developed.

There is evidence provided by federal reports that reducing the cost of using public transportation in conjunction with enhanced routes and schedules increases utilization and improves access to services across a multitude of environments (Shuster et al., 2014). Given that Cumberland County, specifically Fayetteville, has existing public transit infrastructure and communities that have prioritized access to resources as a community health need, this policy is practical for this context. While addressing the individual, interpersonal, and organizational levels of the social ecological framework similar to the MFM, this policy also addresses the political level of the framework by mandating provision of services. Finally, the expected reach

of the policy will include factors, such as initial community and stakeholder engagement and support, the efficacy of getting free- and reduced-price fares to eligible patrons, the capacity to enhance bus schedules, and the ability to enforce each of these components.

Outcomes

A short-term impact of the Mobile Food Market is to increase purchase of the foods provided by the market as evidenced by transaction patterns tracked by the point of sales system. In addition, increasing bi-weekly utilization of SNAP and WIC benefits at the MFM. The comprehensive transportation access policy's short-term impact will be increased daily rides of the public transit system as well as increased enrollment in the free- and reduced-cost fare component.

The long-term impact of the combined Mobile Food Market and the comprehensive transportation access policy is to reduce food insecurity and improve access to nonemergency medical and other services for rural and low-income residents of Cumberland County by addressing transportation barriers, thus reducing health disparities and contributing to heath equity in these communities.

Stakeholders

Both the Mobile Food Market and the comprehensive policy will involve the Department of Public Health, the Greater Fayetteville Chamber, and community representatives at the core of the stakeholder network. The Department of Public Health will serve as the guide for needs and resources for implementation, while the Chamber will possess resources for linking business needs to transportation systems. Community representatives will provide critical information about how to implement the selected program and policy as well as resources and barriers that could affect implementation or sustainability (Cumberland County, n.d.).

Further, the MFM involves the Department of Social Services both as partners in transaction management for providing program-eligible foods and nutrition education. Local government officials will provide necessary approvals needed to implement MFM plans and activities. Lastly, local food producers will be involved as stakeholders as they can provide foods to be sold by the market.

The comprehensive policy will also involve the Department of Social Services to serve as a liaison for determining eligibility for the free- and reduced-price fares. The Department of Transportation and FAST will assist with plans for schedules, routes, and potential buses. The local government, particularly Mayor Mitch Colvin and his board of commissioners, will also be involved as final approval sources for plans developed as well as enforcement of the policy.

Two grassroots stakeholders for both the MFM and the comprehensive policy are the front desk staff at the Smith Recreation Center in Fayetteville and the meal service workers at the Salvation Army. Both sets of staff appear to interact regularly with a large portion of the Cumberland County population, based solely on number of individuals served (Salvation Army of the Carolinas, 2020).

Budget

The budget for the MFM includes both initial and recurring costs. Initial costs will include provisions for supplies needed- the truck/van that will be used to travel to various communities, equipment needed for food storage and transport, point of sales equipment, and nutrition education resources. Recurring costs consist of gas for the mobile unit in addition to salaries for the market's staff members.

The budget for the comprehensive policy will majorly consist provisions needed for increasing stops and routes, those for staffing (specifically bus drivers), services for determining

eligibility and relaying information to the transit system records, equipment (specially buses and gas), and the money lost to the free and reduced-price fares.

Conclusion/Advantages and Disadvantages

An advantage of the Mobile Food Market is majorly its ability to meet immediate food access needs resulting from transportation barriers. It also has the potential to increase utilization of SNAP and WIC benefits. Additionally, it is more likely to stand up to stakeholder and funder scrutiny, as there are examples of successful mobile markets in similar areas in North Carolina. However, the MFM does not address deeper issues of transportation access and has limited sustainability capacity, as it is a downstream solution to transportation barriers.

By contrast, the comprehensive policy is considered a more upstream solution to the transportation issues experienced by low-income rural and urban residents in Cumberland County. If implemented as planned and enforced appropriately, the policy could serve as a long-term commitment to increasing transportation access. However, engagement and support from stakeholders will be more difficult since evidence of success with this type of policy is limited.

Considering the advantages and disadvantages of the Mobile Food Market and the comprehensive policy, it may be more beneficial to the low-income rural and urban residents of Cumberland County to implement the MFM. While it is a more downstream solution and influences lower levels of the social ecological framework, its immediate impact on food access through a bypass for transportation as well as its supporting evidence make it the appropriate choice for this context.

Implementation and Evaluation Plan

Intervention Summary

As a product of constantly increasing vehicle-dependency in communities across the United States, specific neighborhoods and individuals are faced with inadequate transportation and its accompanying consequences- insufficient health care, under-utilized social services, food insecurity, and nutrition-related illness (Mattiolo et al., 2020). In Cumberland County, North Carolina, this is the case with low-income populations in both urban and rural settings. Despite having a public transit system and programs focused on reducing transportation barriers, low-income urban and rural residents still bear the burden of insufficient transportation infrastructure to fulfill everyday needs (Cumberland County, n.d.).

To address this issue, our group has proposed a Mobile Food Market (MFM) similar to other initiatives in North Carolina (Feast Down East, n.d.). The MFM serves to address individual, interpersonal, and community levels of the Social Ecological Framework by virtually bypassing the need for transportation in order to reduce food insecurity and nutrition-related issues. The MFM will travel to underserved neighborhoods to provide residents with healthy food options, including fruits, vegetables, and other foods accepted by WIC and SNAP. Additionally, the MFM will have on-site applications to WIC and SNAP to further reduce need for transportation to these services, as they have in-person eligibility determination requirements. As a result, the targeted neighborhoods will experience perceived increased food security, purchasing of healthy foods, and increased utilization of federal food assistance programs at the MFM in addition to reduced barriers associated with transportation.

Evaluation Plan

Outcomes

Short-term outcomes (measured within 1-3 years of the program) will primarily consist of the number of neighborhoods visited by the MFM during a two-week period; the number of residents served by each market location; the change in WIC and SNAP benefit utilization at the MFM; and the change in weekly fruit, vegetable, and whole grain consumption by MFM participants. The major intermediate outcome (between 4 and 6 years) will be any changes in perception of the food environment. Long-term outcome measures (measured between 7 and 9 years of the program) will include self-reported food security by MFM participants as well as change in dietary patterns as a result of the MFM and change in chronic disease burden (complications from, hospitalizations as a result of, and incidence).

Evaluation Methods

The MFM's evaluation process will be non-experimental in design and include both qualitative and quantitative methods for evaluating program outcomes. Qualitative methods for program outcomes will first consist of listening groups and focus groups to determine stakeholder interests in outcomes evaluated and best practices for collecting data within each community. Once determined, program outcomes related to transportation access will then be evaluated with pre- and post-implementation focus groups and surveys targeting information about transportation patterns, access barriers, and current grocery shopping patterns in addition to how the MFM has affected these various factors. Consumption patterns will be evaluated using pre- and post-implementation food frequency questionnaires. Quantitative measures for program outcomes will consist of number of MFM participants, individual product purchasing patterns, and SNAP and WIC transactions, as gathered from the MFM's point of sales system. Quantitative data will be evaluated at baseline and every six months following implementation.

Sampling

Sampling methods will depend on measures being evaluated. Sampling for changes in participation of the MFM will not require sampling but will use point of sales data. Sampling for pre-implementation surveys will be a door-to-door endeavor within targeted neighborhoods. Sampling for post-implementation program outcomes will occur via random selection of regular attendees of the MFM. Focus groups will involve sampling as a result of public announcements and word of mouth from community leadership.

Measures

MFM outputs will include number of bi-weekly visits to each targeted neighborhood, number of weekly WIC and SNAP transactions, and reach (as defined by traveling to 75% of target neighborhoods and serving 60% of SNAP and WIC participants within the reached neighborhoods). Thus, the outcomes measured will be increased utilization of WIC and SNAP benefits, increased fruit and vegetable purchases and consumption, increased perceived food security, and reduced perception of transportation barriers as they relate to food procurement. The intent of the MFM is to reduce disparities based on socioeconomic status as well as geography by targeting low-income residents of rural and urban neighborhoods.

Analysis Plan

Evaluating the specific measures of the MFM will occur using both qualitative and quantitative analysis methods. REDCap services will be used to structure survey questions and interpret the results. Data generated by the point of sales system will be used to track changes in aforementioned quantitative measures in conjunction with the magnitude of change in these measures over time.

Potential Challenges

Although pre- and post-surveys and focus groups will be used to evaluate changes in transportation access and food security as a result of the MFM, confounding variables may impact the results. Such variables include (but are not limited to) other programs targeting transportation access and food insecurity and utilization of grocery delivery services as available in certain geographic areas. Additionally, challenges during program evaluation may arise as a result of selection bias, especially if certain individuals or groups are more likely to respond to and participate in the selected qualitative evaluation approaches. Further, fluctuating participation patterns of the MFM based on season and monthly needs may make evaluation results difficult to interpret, thus requiring multiple years of data collection with benchmarks occurring at varying points within each year.

Stakeholder Engagement Activities

Stakeholders involved in the planning and implementation of the MFM will be engaged via focus groups and leadership meetings that will include meals. These meals will be prepared using foods provided by the MFM as an approach to encourage participation as well as promote MFM food items. Additionally, stakeholders will be invited to MFM locations to assess its function in the community with the intent of improving reach.

Timing

Based on the 5-year program time allotment, the planning, community engagement and baseline surveys will occur within the first 1.5 years. The following 1.5 years will consist of soft implementation- targeting a few neighborhoods as a pilot to evaluate MFM activities, generate stakeholder feedback, and adjust accordingly. The remaining 2 years will be used for full program operation and its activities. As stated previously, qualitative surveys will be distributed and analyzed every 6 months following the soft implementation of the MFM.

Progress Tracking

Progress with the MFM will be defined as the number of community locations the MFM attends regularly (on a bi-weekly schedule), the number of participants at each location over time, increased utilization of WIC and SNAP benefits, increased fruit and vegetable purchasing, and a reduction in perceived barriers to food access via bypassed transportation systems. If these outcomes are not observed as predicted during each survey and data evaluation benchmark, further focus groups and stakeholder meetings will occur to determine adjustments that can be made to program activities.

Funding and Projected Costs

Stakeholders of the MFM are critical for its success in reducing transportation barriers and increasing food security among low-income urban and rural residents. All possess knowledge and resources pertaining to community barriers and assets that will aid in the program's structure and activities, thus increasing its effectiveness and sustainability. Therefore, stakeholders will primarily include community members of the targeted neighborhoods, local food retailers and growers, Cumberland County's Department of Public Health and Department of Social Services (as well as SNAP and WIC Program office staff), local government officials, Feeding the Carolinas, and the Community Transportation Program, all of whom will be involved in specific activities. The community members will be involved in survey participation and focus groups. Local food retailers and growers will be involved in program planning and evaluation, especially pertaining to food stocking options. The Department of Public Health and the Department of Social Services will oversee the program, its activities, and the evaluation process. Local government officials will engage in planning efforts and approval processes.

Feeding the Carolinas and the Community Transportation Program will be involved in evaluating program activities and adjusting accordingly.

Funding for the MFM will majorly consist of grants from available local, state, and federal resources. Grant allotments will be used to fund program startup costs, specifically the mobile unit and its required food storage equipment, point of sales equipment, and unit advertising. The MFM will be financially sustained by obtaining produce from the Feeding the Carolinas organization, from revenue generated from the basic function of the MFM as a food retailer, and from partnerships with local grocery outlets and food growers. Additional costs will include salaries and fringe benefits of two full time MFM employees, insurance, maintenance, gas, and educational materials. All costs will fall under the program's $500,000 budget.

Strengths and Limitations

The Mobile Food Market's strength is that it addresses transportation barriers by bypassing them completely in terms of food procurement and food assistance applications. The MFM addresses immediate factors pertaining to both transportation and food access, particularly in the individual, interpersonal, and community levels of the social ecological framework. However, the MFM does not assist with transportation barriers with medical needs or additional social services. The MFM is also limited in that it only addresses the lower levels of the social ecological framework, indicating it is a more mid-stream solution to issues associated with transportation. Despite this, it has the opportunity to bring about awareness to the needs of multiple communities in various contexts, proving that transportation barriers are not isolated issues. Such awareness can lead to change on higher levels of the social ecological framework by addressing structural inadequacies pertaining to transportation access and developing upstream solutions.

Data Dissemination

The data gathered from the implementation and activities of the Mobile Food Market will be disseminated through existing community events and publications regularly accessed by residents and leaders. As a result, further bring awareness to nutrition-related illness as a preventable issue that can be largely addressed by recognizing transportation as a major barrier to healthy foods. Additionally, the data will better identify the communities of greatest need in this area and, ultimately, promote partnerships between transportation departments, government groups, and food retailers to foster structural change through policy as it relates to zoning, food outlets, and transportation infrastructure.

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Persuasive Pitch Presentation

Script: Engaging stakeholders throughout the evaluation process is vital to the success of the Mobile Market in its aim for effectiveness within the target populations and for sustainability once the allotted time and funding have ended.

Because of these aims, stakeholders will be involved in listening groups during the evaluation planning phase- not only to determine the outcomes they are interested in but also to tailor subsequent activities to the community's needs and preferences (such as childcare).

Further, the evaluation process will continue to engage stakeholders through participation at the market locations followed by focus groups and individual interviews to gather data pertaining to program successes and opportunities for improvement.

Stakeholder engagement will also be evaluated to ensure adequate representation in activities. All activities will include meals to further incentivize participation and promote food items provided by the market.

A couple of challenges associated with the evaluation of the mobile market primarily include the non-experimental design and risk of selection bias. The outcomes are based on observation pre- and post- market implementation, which may be influenced by other factors affecting individual behaviors such as cyclical shopping or previously established transportation routines. Additionally, much of the evaluation relies on input from community members and stakeholders, which may result in specific groups of people consistently participating in evaluation activities over others (selection bias).

APPENDIX F: CASEY SHUBROOK'S INDIVIDUAL WORK

Individual Problem Statement

Social Determinants of Health (SDoH) and Related Key Issue

Health related efforts have historically focused on downstream solutions, such as efforts to improve nutritional habits through the publication of Dietary Guidelines and encouraging physical activity throughout the lifecycle. Recently, there has been an important and necessary shift toward a greater emphasis on addressing the social determinants of health. Social determinants of health essentially encompass all the personal, interpersonal, structural, and environmental factors that create and contribute to the settings in which we live. According to Healthy People 2020, addressing these factors can "create social and physical environments that promote good health for all" (Office of Disease Prevention and Health Promotion 2020).

Transportation encompasses not only individual vehicle use and public transportation services, but also how accessible, safe, and utilized these services are by the communities they serve. Transportation is also related to access to healthy and nutritious food (National Center for Mobility Management 2021).. According to the 2019 Community Health Needs Assessment of Cumberland County North Carolina, 19% of respondents "disagreed or strongly disagreed against the statement 'it is easy to buy healthy foods in this county'" (North Carolina State Center for Health Statistics 2019 pg 75). This points to the real lack of access that can be addressed by improving the transportation infrastructure of the county. Inadequate access to healthy foods can unfortunately have life-long consequences. (Feeding America)

The negative outcomes of lack of sufficient access to healthy and nutritious foods alone can be detrimental to children (Feeding America). One study found that food insecurity, or a "lack of consistent access to enough food...to live an active, healthy life (Feeding America) is

associated with increased risks of "some birth defects, anemia, lower nutrient intakes, cognitive problems...aggression and anxiety…higher risks of being hospitalized...behavioral problems, depression, suicide ideation, and worse oral health" (Gundersen and Ziliak 2015) among other negative health outcomes.

Geographic and Historical Context

Cumberland county is located in central North Carolina and comprises the 8th and 9th congressional districts. The county was formed in 1754, covering 652.32 square miles of the Coastal Plain region. Cumberland was named after Prince William Augustus who was the Duke of Cumberland and son of King George II. What began as a sparsely populated county has grown to become the 5th most populous county in the state, which largely stems from the construction of the military camp, Camp Bragg (Vocci 2006).. The population of Cumberland as of 2018 was estimated to be 332,330. The latest estimates show approximately 10.1% of the population is Military/Armed forces which is well above the average in North Carolina of 1% of the population (North Carolina State Center for Health Statistics 2019 pg 36). The population is largely comprised of White and Black individuals (see chart below for specific Racial breakdown). In addition to the strong military presence, Cumberland county is known for manufacturing textiles and producing some agricultural products including tobacco and corn, among others (Vocci 2006).

Currently, there are some resources in Cumberland that are readily available to address improving access to healthy foods. The county has a child nutrition program called Cumberland County School Child Nutrition Services, a food bank, Second Harvest Food Bank of Southeast North Carolina, as well as a Supplemental Nutrition Program for Women, Infants and Children location, and general availability of Supplemental Nutrition Assistance Program benefits to those

who are eligible (North Carolina Department of Health and Human Services). Although these resources are all currently established and available, there may be limitations in terms of who is utilizing these resources as well as disparities in terms of access to these resources, as discussed later on.

Priority Population

The priority population is low-income urban and rural underserved communities of Cumberland County. The rate of food insecurity overall in Cumberland is 20%, however, when looking at rates among children, 32.2% of kids live in food insecure homes. A 2019 report published by the North Carolina State Center for Health Statistics found that 54.9% of households in Cumberland are households with children receiving SNAP (higher than the state average of 52.6%) (pg 47). While some programs are currently in place, they seem to be underutilized, leaving thousands of families food insecure. Nutrition and food access also appears to be a priority for those who live in Cumberland as the 2019 Community Health Assessment found that residents in an included focus group listed "eating well/nutrition" (reported by 10.3% of participants) as the area of interest they most wanted more information about, second only to information on "substance abuse prevention" (North Carolina Department of Health and Human Services 2019 pg 77).

Measures and Problem Scope

Cumberland County's current public transportation system, established in 1976 is termed FAST (Fayetteville Area System of Transit). FAST operates "27 fixed-route buses on 19 routes to provide service Monday through Friday from 5:30 AM to 10:30 PM, on Saturday from 7:30 AM to 10:30 PM." According to a 2019 report FAST serves almost 1.6 million passengers each year (North Carolina Department of Health and Human Services 2019 pg 58).

Cumberland public schools currently provide free meals to children via curbside pick-up during summer months (Cumberland County Schools). However, if children's parents are working during the day and are not available to transport them to locations of summer meal programs, they may be missing out on benefits they are entitled. In fact, those most in need of these services, children under the age of 18, are largely unable to utilize this resource.

Rationale/Importance

It is imperative that we address barriers to access to healthy foods as this will have the potential to reduce rates of the preventable downstream health consequences that food insecurity and unreliable access to healthy foods cause. There is largely a lack of reliable sources of healthy foods in the community since the major resource for fresh produce, Walmart, closed in 2018 (Fay Observer 2018). These limitations paired with the limited transportation services which have only been exacerbated by the current pandemic require that further steps be taken to relieve the burden this places on the residents of Cumberland. It is worth noting that the potential effects on public health and long term health outcomes are even greater in children compared to the population at large, because they are still developing. (Hunger and Health). Poor nutrition among children has been linked to chronic conditions including overweight, obesity, heart disease, stroke, Type 2 diabetes, cancer, and even deficits in brain function (Center for Disease Control 2021).

Disciplinary Critique

Poor nutrition is an unfair burden to those in lower SES brackets (European Food Information Council 2012). The consequence is that those of racial and ethnic minorities are often disproportionately affected by the negative health consequences of poor nutrition and lack of access to healthy foods. This is especially important to address during childhood as it can

prevent long term health outcomes spanning from type 2 diabetes to educational status (as a side effect of sub-optimal brain development due to lack of sufficient nutrition) (CDC 2021). It is imperative that a public health leader who understands interconnectedness of the social determinants of health as well as the short- and long-term benefits addressing such determinants can have on a population like that of Cumberland County. Addressing this disparity early in life has the potential to close the gap between negative health outcomes and disparities in quality of life across different SES as well as racial and ethnic groups.

Program and Policy Analysis

Background

The selected priority population is rural and underserved residents of Cumberland County. The rate of food insecurity overall in Cumberland is 20%, however, when looking at rates among children, 32.2% of kids live in food insecure homes. Additionally, the percentage of children living below the poverty line in Cumberland County is 25.7%, well above the state average of 23.9% (North Carolina State Center for Health Statistics 2019 pg 43). While some programs are currently in place (including Cumberland County School Child Nutrition Services, Second Harvest Food Bank of Southeast North Carolina, a WIC location, and SNAP benefits (North Carolina Department of Health and Human Services)), they seem to be underutilized, leaving thousands food insecure. One factor that may be contributing to this underutilization is lack of access to reliable transportation, as evidenced in the county's low rate of public transit utilization North Carolina State Center for Health Statistics 2019 pg 56.

It is imperative that we address access to healthy foods for children because of the downstream health and quality of life consequences that food insecurity and unreliable access to healthy foods due to transportation barriers cause (Feeding America). These limitations paired with the limited transportation services require that further steps be taken to relieve the burden this places on the residents of Cumberland.

It is worth noting that the potential effects on public health and long term health outcomes are even greater in children compared to the population at large, because they are still developing (Fertig 2018). Poor nutrition among children has been linked to chronic conditions including overweight, obesity, heart disease, stroke, Type 2 diabetes, cancer, and even deficits in brain function (Center for Disease Control 2021). The human cost in terms of quality of life is

substantial. The resulting decline in health and increased rates of negative health outcomes often lead to further medical and economic costs which could have been prevented by adequate access to sufficient nutrition.

Purpose

The goal of the Mobile Food Market program in tandem with the Transportation Access Policy is to reduce rates of food insecurity in Cumberland County, particularly among populations that are disproportionately affected. This will be accomplished by reducing transportation barriers and improving access. These efforts will reduce barriers and improve access to healthy and nutritious foods, especially for those of lower of lower socioeconomic status. These efforts will therefore work to reduce the disparity of food insecurity among those of lower SES and ethnic and racial minorities compared to the general population of Cumberland County, closing the gap in rates between these groups.

Strategies and Activities

The Program proposed is a Mobile Food Market. This program will provide local produce and WIC and SNAP eligible goods for sale, include an educational component which may be related to healthy living, food preparation, eating or physical activity, and maintain SNAP and WIC applications on site for those who are eligible. The MFM will be required to go to specific rural and low income areas on specific days for specific periods to time. The details of when and where will be dependent on the needs and interest of the community members, as determined by a community needs assessment. The inclusion of SNAP and WIC applications on site and accepting SNAP electronic benefits transfers, more commonly referred to as EBT has been modeled in other MFM in the state with positive results. Incorporating WIC and the ability to use SNAP EBT payments at farmers' markets has been shown to increase access and

consumption of fruits and vegetables particularly among those with lower incomes (Robert Wood Johnson Foundation 2020b). A similar model to the proposed MFM is the Local Motive Mobile Farmers' Market which currently sells local produce year-round in Burgaw North Carolina (Feast Down East). A study measuring the outcomes of a mobile market was conducted in North Carolina and found promising results. The study found that "mobile markets that sell locally grown produce at reduced prices, with nutrition and cooking education components, can increase produce consumption," (Robert Wood Johnson Foundation 2020a). This is strong evidence that a MFM would produce the same results in our population of interest.

The policy proposed is a Transportation Access Policy which will mandate existing transit programs to provide reduced cost passes for low income residents/disadvantaged populations/those without access to reliable transportation. This will be accomplished by providing SNAP and WIC recipients with free or reduced FAST passes to improve access to public transportation. These ride vouchers will improve access not only to the Mobile Market, but can be used to reduce barriers to attending WIC visits, grocery stores, doctor's appointments etc (County Health Rankings & Roadmaps).

This program and policy will address the socio ecological model on multiple levels. On the individual level, the Transportation Access Policy will improve access to transportation and local resources including the Mobile Market, but also local clinics and grocery stores as well. On the interpersonal level, the educational component of MFM activities will foster a sense of community and provide further motivation and support for family involvement. On a community level, the MFM will reduce food insecurity rates among the neighborhoods and communities within Cumberland that it visits and improve participation in WIC and SNAP among those eligible by reducing transportation barriers to these resources.

The specific reach will be partially dependent on the individual residents' choice to participate. The FAST passes will be available to all WIC and SNAP eligible enrollees. The specific number of persons reached by the Mobile Food Market will depend on the results of a community survey assessing need and availability to attend the Market, which will dictate where and when the Market occurs.

Outcomes

Long-term impact:

The long-term impact will be a decrease in perceived food insecurity among Cumberland County residents, determined by surveys, and an increase in WIC and SNAP enrollment among eligible MFM participants. The long-term impact will have the greatest impact among those of lower SES and those who are ethnic and racial minorities by reducing barriers to enrollment and access to healthy foods (Larson et al 2008). This will ultimately lead to closing the gap between those of lower SES compared to the population of Cumberland County at large in terms of food insecurity rates.

Short-term outcome objectives:

By January 2022, reduce food insecurity among those below 200% FPL by 20%. This will be a result of the combined effort of reducing barriers to transportation access via the Transportation Access Policy in Tandem with the implementation of the MFM Program. By improving transportation access to disadvantaged populations in particular, the MFM will be able to improve food security among communities most in need. This population includes those of lower SES and racial and ethnic minorities. Therefore, the emphasis on those below 200% FPL as this population has higher rates of food insecurity compared to CC as a whole, and is disproportionately composed of minorities.

Stakeholders

Stakeholders include parents, local schools, NC Cares 360, and the Mayor of Cumberland, Mitch Colvin, Pathways for Prosperity, DHS, FAST, and local farmers. Parents are particularly important stakeholders as they are not only part of the population we hope to serve with these initiatives but they are also the guardians of children who will receive benefits of these efforts (and are a particularly vulnerable portion of the population of interest). Parents have the potential to endorse, financially contribute to, and spread awareness and general support for the initiatives. Most are likely to be a source of support as they will want to improve food security in their neighborhood. Potential resistance may be any disruptions including sound or traffic that could be a byproduct of the Mobile Food Market coming to their neighborhood. Schools will also be motivated to support these efforts and can collaborate to organize school field trips to the Market, identify kids and families who may be eligible for benefits, identify how best to reach potentially interested families, and provide insight as to how to make the intervention most beneficial for the intended recipients. The school board's support will potentially lead to school volunteers and will improve dispersion of flyers and other advertising materials to their students during the year.

DHS will be important to include as they are leading WIC and SNAP which largely encompasses our priority population. DHS also has important infrastructure and resources that will be helpful in identifying, recruiting, and sustaining interest in the initiative.

For the policy, it will be vital to collaborate with FAST to ensure the priority population is reached and bus passes can be allocated. For the MFM Program, local farmers will be a key player. In an ideal collaboration, farmers will donate their leftover produce not sold to stores and customers to the Market.

Mayor Colvin is an important stakeholder as his support has the potential to change the trajectory of any program or policy that is enacted. Colvin has spoken previously in support of local produce initiatives and will have important insights to what makes a program successful. Further, his support will expedite the process of gaining support of other important political figures, groups, and the general community. The Pathways for Prosperity is a Fayetteville initiative that aims to "improve economic prospects for all residents and to break the cycle of generational poverty by bringing together local government leaders, community based organizations and community members in a coordinated effort," (Pathways for Prosperity 2019). Proposing the initiative as an additional arm to Pathways for Prosperity's coalition would provide tremendous value in terms of community member insight, sustainability of the project, and general resources.

Budget

Funds will come primarily from current federal, state, and local streams. For the Mobile Food Market Program, additional funding will be necessary for startup costs, and will be covered by local and state grants. There will also be the cost of the Market itself, the cost of purchasing local produce and WIC and SNAP eligible food items to sell at the MFM, as well as two part time employees to coordinate where and when the Market will be held, spearhead advertising, and complete the necessary applications for grants to support the Market's continual operations. For the Transportation Policy, the local FAST board will be responsible for creating and distributing the free and reduced price bus passes. Those who are eligible will be pre-identified by current WIC and SNAP databases. The main cost for the policy will be the cost of the actual transportation passes provided.

Conclusion/Advantages and disadvantages

The advantages of a MFM Program include the multi-faceted intervention and resources it provides. The MFM will eliminate the transportation barrier many CC residents face by being nutritious food right to their neighborhoods. This includes improved access to WIC and SNAP applications as well as increased utilization of these benefits, as the market will accept SNAP and EBT. The educational component and access to WIC and SNAP will foster a more communal initiative, promote more family-oriented participation, and promote healthy habits. Potential disadvantages include limitations on where and when the Mobile Market can be held, as well as the necessary logistic barriers to accepting SNAP EBT benefits and maintaining SNAP and WIC applications on site. This program may also be difficult to sustain long-term and will require much upkeep and continual community and financial support to ensure its continuing success.

The advantages of a Transportation Access Policy include utilization of current infrastructure in the form of the local FAST transport system which improves efficiency and reduces cost as compared to starting an entirely new initiative, and specifically targets those more likely to experience transportation barriers by providing passes to those currently receiving WIC and SNAP benefits. Disadvantages may include the logistic efforts to coordinate with the FAST system, ensuring that all eligible receive a bus pass, and that the bus travels to locations where those who receive these passes live (especially rural areas that may not currently be part of the bus's route).

When deciding on a policy or program, the values that were priorities included addressing disparities in food access by reducing transportation barriers, utilizing current community resources, and creating an infrastructure that will be long lasting in its effect on reducing food insecurity rates among community members in CC. Given these values, the MFM

Program is the superior option. A MFM will eliminate the problem of transportation for residents in CC and allow for direct and immediate action against the current high rates of food insecurity. Further, MFM's have been implemented in North Carolina already and shown success serving similar communities. This suggests that a MFM would thrive in MFM and effectively reduce food insecurity. A MFM has the potential to significantly close the disparity between those of lower SES and the general population of CC as well, as the Market will specifically target lower SES and more rural neighborhoods in the county. Additionally, this plan will allow for improved access to not only nutritious food, but to other important health-related services by including SNAP and WIC applications on site (County Health Rankings & Roadmaps 2020). It is because of the immediate impact and evidence of success in similar communities that the MFM will be the best choice.

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Implementation and Evaluation Plan

Intervention Summary

A major challenge facing Cumberland County is the "lack of consistent access to enough food for an active, healthy life," (USDA 2019), also known as food insecurity, which is partially the result of transportation barriers in the county. A major barrier to securing food security is a lack of sufficient and reliable transportation to grocery stores and markets. Implementing a strategy to improve transportation within CC has the potential to improve food access and reduce rates of food insecurity in the county. The MFM Program aims to increase food access and reduce rates of food insecurity in Cumberland County. Similar Programs have been implemented throughout North Carolina including, Out of the Garden Project Fresh Mobile Market in Greensboro County (Out of the Garden 2021), Inter-Faith Food shuttle in Wake County (Food Shuttle) and Local Motive Mobile Farmers' Market in Pender County (Feast Down East). The specific aspects of these markets vary, but all serve as examples of successful food distribution in communities that face transportation barriers. In particular, the Market will address populations that are disproportionately affected by addressing the transportation barrier and reduce the disparity in rates of food insecurity among those of lower SES and ethnic and racial minorities compared to the general population of Cumberland

The MFM will include activities related to healthy living, food preparation, eating or physical activity and maintain Supplemental Nutrition Assistance Program (SNAP) and Women, Infants, and Children (WIC) assistance program applications on site as well as accept SNAP EBT payments. This Market will be required to go to specific rural and low income areas on specific days for specific periods to time. The details of when and where the will be will be dependent on the needs and interest of the community members. The Market will address the

socio ecological model on multiple levels. On the individual level, the Mobile Market will provide a local source of nutritious food and access to SNAP and WIC applications. On the interpersonal level, the educational component to each Mobile Market activity will foster a sense of community and provide further motivation and support for family involvement. On a community level, the MFM will reduce food insecurity rates among the neighborhoods and communities within CC that it visits.

The short-term impact of the Market will be primarily measured by a 20% reduction in food insecurity among those below 200% FPL within one year of implementation. The long-term impact will be a decrease in perceived food insecurity among Cumberland County residents, determined by surveys, and an increase in rates of people eligible for WIC and SNAP enrolled in benefits.

Evaluation Plan

Outcomes

The outcomes that will be measured to evaluate the Program include changes in WIC and SNAP participation as a result of MFM implementation, number of people served by the MFM, and rates weekly fruit, vegetable, and whole grain consumption among MFM participants. Long term outcomes include self-reported food insecurity and dietary patterns among MFM participants. Participation rates will simply be observed and recorded. There will be initial, mid-point, and post-implementation surveys, all of which will be available in both English and Spanish. The needs assessment will focus on potential locations, schedule, food preferences, interest in utilizing the Program, and potential concerns.

Collection Method and Sampling Strategy

Once the Market has been implemented, surveys will be conducted to record attendance at the market and monitor changes in fruit vegetable, and whole grain consumption as well as utilization of WIC and SNAP. In terms of sampling, the initial survey regarding interest in utilization of the program will be conducted going door to door to a pre-specified sampling of the county. The attendance will be recorded as the total number of attendees. Rates of WIC can be observed via public database information. The Food Frequency Questionnaire and surveys regarding fruit, vegetable and whole grain consumption, food insecurity, and general food access will be given to a random sample of regular Market attendees. Attendees at the Market will be asked to complete the survey and provided a MFM coupon as compensation. Specific measures that will be monitored include the population reached (measured by the percent of WIC and SNAP recipients participating), the rate of food insecurity among free and reduced price meal school children, and via a survey about perceived quality of life and access to nutritious and sufficient food. The analysis plan will consist of both qualitative and quantitative data as well as REDCap surveys analysis, including the USDA's validated self-report survey (see appendix) to assess food security (2012). Quantitative data will include rankings of perceived food security as well as total numbers of participation at various Market activities, the number of new WIC and SNAP enrollees, among others. Qualitative data will include responses to some survey questions as well as general feedback received from cooking classes and other Market activities. Potential challenges to the analyzation include the difficulty of objectively measuring open-ended survey questions as well whether determining the rate of regular MFM utilization from the participation data.

Stakeholder Engagement

To engage with stakeholders in the evaluation process there will be both activities and incentives to encourage participation. For those who participate in surveys and other forms of data collection as part of the analysis, coupons to the Mobile Market will be provided, which will be able to be applied to purchases made at the market. Additionally, the Market will include cooking classes at community pop-ups, highlighting different community leaders as guests. Those attending a class will receive a punch card and additional coupons and prizes will be given out accordingly. At these classes, participants will also be given a short survey about their experience and allow for feedback.

Timing

The MFM Program is projected to start in the summer of 2021. The implementation process will require approximately 18 months of planning which includes community engagement and initial data collection. An additional 18 months will be allocated to a "soft implementation" during which the Market will begin to visit neighborhoods, engage with the community, and continue to isolate which aspects of the Market are most helpful and draw the most participation and interest. A soft implementation will allow for the MFM to begin visiting venues and serving the community. The data from this period will be primarily used to iteratively adjust the proposed schedule, activities, and resources to best fit those who attend. Following this initial 36-month period will be a two-year period allocated to data collection. Although it is likely the full effect of the Market may not yet be visible in the data at this junction and further data collection following this period is recommended.

Progress Defined

Progress will be defined by an increase in attendance to the Market, increase in reported fruit, vegetable, and whole grain intake, and a decrease in reported food insecurity among MFM

participants. If the expected progress does not occur, additional stakeholder engagement and community member surveys will be conducted to inform how best to proceed to reach these progress goals.

Stakeholders

Stakeholders include the Department of Public Health, parents, local schools, NC Cares 360, and the Mayor of Cumberland, Mitch Colvin, Pathways for Prosperity, DHS, FAST, and local farmers. The Department of Public Health will be a key partner to collaborate with to coordinate dissemination of information and resources, and ensure that Mobile Market is designed in a way to best fit the needs of the people of Cumberland. Parents are particularly important stakeholders as they are not only part of the population we hope to serve with these initiatives but they are also the guardians of children who will receive benefits of these efforts (and are a particularly vulnerable portion of the population of interest). Parents have the potential to endorse, financially contribute to, and spread awareness and general support for the initiatives. Most are likely to be a source of support as they will want to improve food security in their neighborhood. Potential resistance may be any disruptions including sound or traffic that could be a byproduct of the Mobile Food Market coming to their neighborhood.

The local schools will also be motivated to support these efforts and can collaborate to organize school field trips to the Market, identify kids and families who may be eligible for benefits, identify how best to reach potentially interested families, and provide insight as to how to make the intervention most beneficial for the intended recipients. The schools' support will potentially lead to school volunteers and will improve dispersion of flyers and other advertising materials to their students during the year. There may be some resistance from the school district

in terms of potential cost required for implementation, but this is not expected to overshadow their general support.

DHS will be important to include as they are leading WIC and SNAP which largely encompasses our priority population. DHS also has resources that will be helpful in identifying, recruiting, and sustaining interest in the initiative.

Partnering with local farmers will be a potential source of produce, as farmers can donate their surplus items to the Market. Additionally, the Mobile Market will work through their other major stakeholders to partner with local grocery stores who will be able to sell their WIC and SNAP eligible items at the Market.

The major source of funding will be state and local grants. Additionally, collaboration with Feeding Carolina will be an important source of donated produce from local food producers for the Market. Once the Market is fully operational, the small margin or revenue that is attained will be used to further fund it. Funding will be necessary to cover the initial costs of the MFM vehicle and the associated necessary infrastructure (refrigerator, storage etc.), and equipment. Beyond start-up costs, funds will also be necessary to hire two part-time employees (ideally Cumberland County community members) to spearhead advertising, organization, and completing the necessary applications for grants to support the Market's ongoing operations. Major limitations and challenges include limitations on where and when the Mobile Market can be held, as well as potential logistic barriers to accepting SNAP EBT benefits and maintaining SNAP and WIC applications on site. Sampling bias may also be a challenge when conducting surveys and collecting feedback on the Market. To address this a small survey will be added to local WIC and SNAP appointments regarding the Market, whether one has attended, and if not why they have chosen not to. Another potential challenge is measuring noticeable change within

the time period as it can often take years for the implementation of a program to reflect the true effects on a community through the data.

The advantages of a MFM Program include the multi-faceted intervention and resources it provides. The MFM essentially eliminates the transportation barrier many face in access to sufficient nutritious foods by traveling to these neighborhoods directly. This allows the MFM to serve as a hub of resources that may otherwise be inaccessible to many CC residents due to transportation barriers. Further, the MFM will improve access to WIC and SNAP applications and increased utilization of these benefits, as the market will accept SNAP EBT.

The data that is collected from this analysis and the annual report it will produce will bring awareness to neighboring communities regarding the potential health effects of limited access to transportation. It may also serve as a pilot for similar communities facing low transportation access and high rates of food insecurity. The MFM Program data will also serve to inform transportation and governmental organizations as to how best to support long-term structural change to address limited transportation access.

USDA's Validated Self-Report Survey

U.S. Household Food Security Survey Module: Six-Item Short Form Economic Research Service, USDA

September 2012

Revision Notes: The food security questions in the 6-item module are essentially unchanged from those in the original module first implemented in 1995 and described previously in this document.
September 2012:

• Added coding specification for "How many days" for 30-day version of AD1a. July 2008:

• Wording of resource constraint in AD2 was corrected to, "...because there wasn't enough money for food" to be consistent with the intention of the September 2006 revision.

January 2008:

• Corrected user notes for coding AD1a. September 2006:

- • Minor changes were introduced to standardize wording of the resource constraint in most questions to read, "...because there wasn't enough money for food."
- • Question numbers were changed to be consistent with those in the revised Household Food Security Survey Module.
- • User notes following the questionnaire were revised to be consistent with current practice and with new labels for ranges of food security and food insecurity introduced by USDA in 2006.

  Overview: The six-item short form of the survey module and the associated Six-Item Food Security Scale were developed by researchers at the National Center for Health Statistics.

  Background: The six-item short form of the survey module and the associated Six-Item Food Security Scale were developed by researchers at the National Center for Health Statistics in collaboration with Abt Associates Inc. and documented in "The effectiveness of a short form of the household food security scale," by S.J. Blumberg, K. Bialostosky, W.L. Hamilton, and R.R. Briefel (published by the American Journal of Public Health, vol. 89, pp. 1231-34, 1999). ERS conducted additional assessment of classification sensitivity, specificity, and bias relative to the 18-item scale.

  If respondent burden permits, use of the 18-item U.S. Household Food Security Survey Module or the 10-item U.S. Adult Food Security Survey Module is recommended. However, in surveys that cannot implement one of those measures, the six-item module may provide an acceptable substitute. It has been shown to identify food-insecure

households and households with very low food security with reasonably high specificity and sensitivity and minimal bias compared with the 18-item measure. It does not, however, directly ask about children's food security, and does not measure the most severe range of adult food insecurity, in which children's food intake is likely to be reduced.

Transition into Module :

[Begin Six-Item Food Security Module]

These next questions are about the food eaten in your household in the last 12 months, since (current month) of last year and whether you were able to afford the food you need.

NOTE: If the placement of these items in the survey makes the transition/introductory sentence unnecessary, add the word "Now" to the beginning of question HH3: "Now I'm going to read you...."

FILL INSTRUCTIONS: Select the appropriate fill from parenthetical choices depending on the number of persons and number of adults in the household.

3. HH3. I'm going to read you several statements that people have made about their food situation. For these statements, please tell me whether the statement was often true, sometimes true, or never true for (you/your household) in the last 12 months—that is, since last (name of current month).

   The first statement is, "The food that (I/we) bought just didn't last, and (I/we) didn't have money to get more." Was that often, sometimes, or never true for (you/your household) in the last 12 months?

   [] Often true
   [] Sometimes true [] Never true
   [] DK or Refused

4. HH4. "(I/we) couldn't afford to eat balanced meals." Was that often, sometimes, or never true for (you/your household) in the last 12 months?
   - [] Often true
   - [] Sometimes true
   - [] Never true
   - [] DK or Refused

AD1. In the last 12 months, since last (name of current month), did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn't enough money for food?

[ ] Yes
[ ] No (Skip AD1a) [ ] DK (Skip AD1a)

AD1a. [IF YES ABOVE, ASK] How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

[] Almost every month
[] Some months but not every month [] Only 1 or 2 months
[] DK

2. AD2. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?

   [] Yes [] No [] DK

3. AD3. In the last 12 months, were you every hungry but didn't eat because there wasn't enough money for food?

   [] Yes [] No [] DK

[End of Six-Item Food Security Module]

User Notes
(1) Coding Responses and Assessing Households' Food Security Status:

Responses of "often" or "sometimes" on questions HH3 and HH4, and "yes" on AD1, AD2, and AD3 are coded as affirmative (yes). Responses of "almost every month" and "some months but not every month" on AD1a are coded as affirmative (yes). The sum of affirmative responses to the six questions in the module is the household's raw score on the scale.

Food security status is assigned as follows:

- • Raw score 0-1—High or marginal food security (raw score 1 may be considered marginal

  food security, but a large proportion of households that would be measured as having marginal food security using the household or adult scale will have raw score zero on the six-item scale)

- • Raw score 2-4—Low food security
- • Raw score 5-6—Very low food security

  For some reporting purposes, the food security status of households with raw score 0-1 is described as food secure and the two categories "low food security" and "very low food security" in combination are referred to as food insecure.

  For statistical procedures that require an interval-level measure, the following scale scores, based on the Rasch measurement model may be used:

Number of affirmatives

0
1
2
3
4
5
6 (evaluated at 5.5)

Scale score

NA 2.86 4.19 5.27 6.30 7.54 8.48

However, no interval-level score is defined for households that affirm no items. (They are food secure, but the extent to which their food security differs from households that affirm one item is not known.)

(2) Response Options: For interviewer-administered surveys, DK ("don't know") and "Refused" are blind responses—that is, they are not presented as response options but marked if volunteered. For self-administered surveys, "don't know" is presented as a response option.

(3) Screening: If it is important to minimize respondent burden, respondents may be screened after question AD1. Households that have responded "never" to HH3 and HH4 and "no" to AD1 may skip over the remaining questions and be assigned raw score zero. In pilot surveys intended to validate the module in a new cultural, linguistic, or survey context, however, screening should be avoided if possible and all questions should be administered to all respondents.

(4) 30-Day Reference Period: The questionnaire items may be modified to a 30-day reference period by changing the "last 12-month" references to "last 30 days." In this case, item AD1a must be changed to read as follows:

AD1a. [IF YES ABOVE, ASK] In the last 30 days, how many days did this happen? _____ days

[] DK

Responses of 3 days or more are coded as "affirmative" responses.

(5) Self Administration: The six-item module has been used successfully in mail-out, take-home, and on-site self-administered surveys. For self-administration, question AD1a may be presented in one of two ways:

- • Indent AD1a below AD1 and direct the respondent to AD1a with an arrow from the "Yes" response box of AD1. In a parenthetical following the "No" response box of AD1, instruct the respondent to skip question AD1 and go to question AD2.

- Present the following response options to question AD1 and omit question AD1a:

o Yes, almost every month

o Yes, some months but not every month o Yes, only 1 or 2 months
o No

In this case, either of the first two responses is scored as two affirmative responses, while

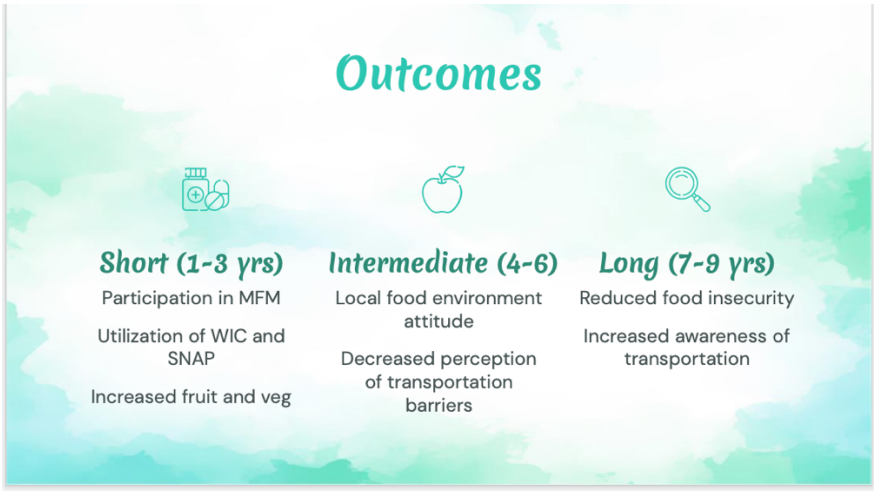
"Yes, only 1 or 2 months" is scored as a single affirmative response.
The two approaches have been found to yield nearly equal results. The latter may be preferred because it usually reduces the proportion of respondents with missing information on how often this behavior occurred.

All in the Neighborhood Persuasive Pitch Presentation

Slide 13:

Slide 13 script: The Mobile Food Market Program has two main objectives. First, the program will reach 75% of identified food swamp neighborhoods in Cumberland County. Second, the Program will reduce food insecurity among those that are below 200% FPL by 20% within one year of the Market being fully operational.

Slide 14:



Slide 14 script: Outcomes and measures are designated as either short-, intermediate, or long-term. These include the number of participants in the Mobile Food Market, self-report data regarding transportation barriers, and reduced rates of food insecurity, among others.

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APPENDIX G: STEVEN YATES' INDIVIDUAL WORK

Individual Problem Statement

Social Determinant of Health

Social determinants of health (SDOH) are the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks (Healthy People 2030). When it comes to your life expectancy, Zip Code is more important than your genetic code (Dwyer-Lindgren, 2017). There are many factors associated with this reality. The life expectancy may be dramatically different even between neighborhoods that are in close proximity to each other (LeCounte, 2017). "The neighborhoods people live in have a major impact on their health and well-being" (CDC, 2018). Many factors contribute to the differences in neighborhoods. Differences in poverty, racial demographics, violence, pollution, food access, transportation and availability of community resources all contribute to the overall health outcomes of the residents of these neighborhoods (CDC, 2018). The built environment has short term impacts on health especially from violence, air quality (asthma), water and sanitation (bacterial and toxin exposures), and food availability (Healthy People 2020). Food access and food quality contributes to many chronic health problems including obesity, hypertension, hyperlipidemia, heart disease and cancer (Surgeon General Report 2011). Transportation access helps the population gain access to food resources, education, medical care, employment and other needed services (Spencer, 2011).

Geographic and historical context:

Cumberland County, NC (CC) is the focus of our work. We are interested in the Neighborhood and built environment in CC. CC has a land mass of 652.32 square miles and is

in the southeast of NC. It was formed in 1754. The county seat is Fayetteville which is located on the Cape Fear River. The county has 11 townships and 8 cities and towns. Fort Bragg and Pope Air Force Base are also in Cumberland county.

The State of the County Report for 2019 gives several key facts about the population of CC (Green, 2020). There are several key demographics for CC which are crucial factors contributing SDoH for the residents of CC outlined in Table 7. These include race, poverty, housing instability and unemployment.

The geographic distribution of the residents with significant neighborhood and built environmental concerns is concentrated into a few neighborhoods which are mostly in the city of Fayetteville. (Green, 2020).

Priority Population:

The State of the County Report notes three domains of particular concern: Economics, Housing and Transportation, and Social and neighborhood. The report emphasizes 6 census tracts with particularly high disparities (these are mostly in Fayetteville) and Census tract 24.01 in Fayetteville has the highest disparities (Green, 2020). Our priority population will be the residents of Cumberland county who are non-military. We will be particularly interested in those populations in the urban area of Fayetteville who comprise a significant fraction of those who are in poverty, have housing insecurity, and lack food and transportation access.

We are particularly concerned about transportation access. This is important because lack of transportation is associated with food insecurity, malnutrition (Morris, 2020), lack of adherence to medical care (Kalichman 2014), increased visits for Emergency Room care (Kandasamy, 2018), and hospital readmission (Spatz, 2020). There is evidence that addressing transportation needs can improve population health (Fraze, 2016).

Measures of Problem scope:

There is public transportation in the County. Fayetteville Area System of Transit (FAST) is the city public system. There is also the Community Transportation program in Cumberland County for rural residents. But public transportation has challenges. Physical access can be challenging for elderly and disabled individuals. Costs can be a barrier for the individual. Public financing of the programs also has created limitations. Additionally, services may be inadequate for those who need transportation between urban and rural locations especially for work. The Cumberland County 2019 Community Health Needs Assessment notes that public transportation is rare in the county with only 0.6% of workers commuting by Public transportation (1.1% for NC average) and 4.0% walk to work (1.8% for NC average) (CC 2019 Health Needs Assessment). That report also notes that transportation access was in the top 10 areas of need and a concern reported by 3.2% of residents surveyed (CC 2019 Health Needs Assessment).

Rationale/Importance:

The population in these very poor neighborhoods is our focus. Census tract 24.01 is particularly important because those residents are overrepresented by minorities, have excessive poverty, longer commutes to work, and significant housing stress (44% of housing is mobile homes and only 24% of housing units are owner occupied) (Census reporter). Figure 3 shows the significant disparity of income among neighborhoods. Furthermore, the Community needs assessment verifies that Zip Codes 28301, 28307, and 28308 have severe Socioeconomic Needs with SocioNeeds Index above 89.3 (CC 2019 Health Needs Assessment). Such intersection of minority populations, poverty and housing insecurity clearly call for action.

Disciplinary critique:

Why are we concerned? As leaders in public health, we are called to address conditions that can assure people have the opportunity to be healthy. The values of public health leadership are well described in Principles of the Ethical Practice of Public Health, version 2.2 published by the Public Health Leadership Society (Upshur, 2002). The first value is that "Humans have a right to the resources necessary for health." Addressing the social conditions that impact health outcomes is fundamental to that value. Another key value of public health leadership is that "People and their physical environment are interdependent." (Upshur 2002). As such people have the capacity to affect their environment and are vulnerable to the conditions of their environment. The principles for public health leaders are relevant for this topic in two key areas: 1) Public health should address principally the fundamental causes of disease and requirements for health, aiming to prevent adverse health outcomes, and 2) Public health programs and policies should be implemented in a manner that most enhances the physical and social environment. (Upshur, 2002) These principles define why we as public health leaders are concerned about the SDOH of physical and built environment.

System, Stakeholder and Transformation Analysis

Social Determinant of Health (SDoH): Neighborhood and Built Environment

Introduction:

Neighborhood and built environment are important SDoH which has an impact on the health of a population. "The neighborhoods people live in have a major impact on their health and well-being" (CDC, 2018). Differences in poverty, racial demographics, violence, pollution, food access, transportation and availability of community resources all contribute to the overall health outcomes of the residents of these neighborhoods (CDC, 2018). Cumberland County, NC is the area we are focusing on in this analysis. The State of the County report for 2019 (Green, 2020) reports significant demographic data concerns for the population. These data include high populations of minorities (African Americans, Native Americans, Hispanics and mixed races), significant poverty (17% in poverty), housing stress, unemployment, and food insecurity (28% of population is food insecure) (Green, 2020).

Policy Proposal:

Our policy for addressing the SDoH of Neighborhood and Built Environment is focused on Transportation. It is a policy to address Nonemergency Medical and Critical Transportation Access for Disadvantaged Populations. This two-pronged policy will be enacted to (1) reduce cost of transportation access for those individuals experiencing poverty coupled with (2) a systematic expansion of services for resident in high need areas to critical destinations of employment, non-emergency medical care, food/groceries, education, and social service locations. There is recognition of this need as documented in a GAO Report to congress in December 2014 (GOA 2014). The benefits are the transportation access for the target populations. The disadvantage is that the policy will create a need for increased funding for the

transportation programs. It helps the population in the short term and has the potential to impact the economics of these individuals if they are able to gain education and better wages.

An alternative policy could be implementing ride share programs. There remains some concern for this strategy due to concerns of trust and safety and limited data is available to validate efficacy. (Graham-Rowe, 2011. Chan, 2012). We will not pursue ride share but will instead focus on public transportation services and enhancing access for our target population.

Program Proposal:

Our program will be a mobile market to bring locally grown produce as well as food items that meet requirements of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) to specific high need urban and rural areas. This will increase access to healthy foods for disadvantaged residents, especially those living in areas considered a food desert. The advantage is the ability to quickly meet the needs of food insecure populations. The disadvantage is that this is a fix for the current problem and does not address the long-term needs of those individuals who are food insecure.

An alternative program would be development of a community garden. This has been done with much success particularly when partnering with multiple organizations. I personally was very active in the Rotary Community Garden in Gastonia, NC. It was created with multiple partnerships from the faith and civic community and delivered produce to many disadvantaged individuals (primarily delivering produce to shelters and food banks). This approach is low cost and is effective, but it can only reach a limited population. It is largely a seasonal program as production from the garden does not provide much produce in the winter months.

Our program proposal is the mobile market. It will be able to reach a larger population than a community garden and has some flexibility to adapt over time as the population and needs change.

Stakeholders:

The critical stakeholders for both the transportation policy and the mobile food market have overlap. These stakeholders are best seen in the Rich Picture (Appendix A, Group Deliverables, Figure 1). Both the policy and the mobile food market include be community residents, local business leaders, the Cumberland County Public Health Department (CCPHD), the Cumberland County Department of Social Services (CCDSS), the faith community, Educational institutions and leaders, Civic Organizations, the Fayetteville Cumberland County Economic Development Corporation (FCEDC), Philanthropic Agencies, Commissioners of Cumberland County, the Fayetteville City Council and selected NC government leaders. Stakeholders specific to the transportation policy are the Fayetteville Area System of Transit Advisory Committee (FAST), the Community Transportation Program and its Transportation Advisory Board (TAB), and the NC Department of Transportation (NCDOT). Stakeholders unique to the mobile food market program include local food producers, food retailers and distributors.

Stakeholder Analysis Tools:

An analysis of key stakeholders involves several tools. The first step is to evaluate the influence and interest for stakeholders (Table 8). Using this tool gives insight into strategies that will be needed to help the decision makers become supporters of the policy and program. After evaluating the influence level of the stakeholders, it is valuable to do a CATWOE Analysis of the stakeholders to identify their world view. Table 9 shows the analysis and Root Definition for

one of the stakeholders (the public in need of transportation). The world view of others is likely to be in conflict. Political leaders may view limiting costs in order to reduce taxes (this is likely held by residents who are not in need of transportation access). Agencies may be focused on budgetary constraints. The mobile market has stakeholders who stand to gain or lose in the implementation of this program. Their views will be in conflict when balancing increased food access with business effect of the competing retail option. It will be important to look at these systems and consider unintended consequence. Where there is conflict or adverse consequences it will be necessary to find solutions. Defining the health equity concerns through a social justice lens may help bring reluctant but powerful individuals to agree even if they are not champions. Additionally, it is possible that cooperation through negotiation and Give-Get will also bring successful partnership of stakeholders (Table 10).

Summary of Stakeholders:

When including the stakeholders, it is important to use "Participatory Planning." (Community Toolbox). The elements of participatory planning involve all the stakeholders, particularly the individuals who we are trying to reach. "A participatory planning approach avoids pitfalls caused by ignorance of the realities of the community or the target population." (Community Toolbox). Those disadvantaged populations we hope to benefit from our policy and program need to help us understand their needs and wants. Brainstorming with them to gain understanding of what will work and what will fail is crucial. The quote from Field of Dreams is, "If you build it, he will come." (Costner, 1999). This may or may not be true. Make sure the target population is on board. Having CCPHD and FCEDC engaged will be important because they will be a voice to influence and help lobby those with lower interest who have power (particularly Government officials). Once those lower interest but high influence groups are

engaged then there can be a collective effort to follow through on the policy and programs. Ultimately the implementation of the policy and program will go to those who are most engaged and most powerful—the entities that are currently responsible for transportation and for food access. FAST and TAB and the NCDOT will require budget support from state and local government. They may also be able to tap into resources from the civic and philanthropic agencies who will be encouraged to participate in the dialogue and understand why this is important. Hopefully they will also adopt the policy and program and partner to see them succeed.

Stakeholders for the mobile food market are many of the same individuals mentioned in the policy. They include the population (both those in need and those who are more secure), CCDSS (who will have responsibility for the MFM), CCPHD, FCEDC, government leaders and officials, business leaders, faith and civic members and philanthropy organizations. The unique and more critical element is finding ways to partner with the entities who may be adversely affected by the program (particularly retail entities that will be in direct competition with the mobile market). Finding ways to work with them to reduce potential negative impact and even find collaboration that brings benefit will be crucial. That way they will be able to take a neutral or positive position toward the program. It is unlikely that the mobile market would have the products to succeed in its mission without some retail cooperation. Those entities have significant power and having them as adversaries would jeopardize the success of the program. Finally, a local source of influence and interest is the Farmers Market and local Food Producers. These stakeholders have an opportunity to contribute and benefit from the Mobile Market.

Transportation Policy and Mobile Market Program

Engagement Plan:

Our engagement plan for our Accountable Care Community (ACC) is concerned about the SDoH of Neighborhood and Built Environment. The policy will address Transportation access for disadvantaged residents of CC and focus on cost and service. We will reducing cost for those who have financial needs and expand service options as needed to meet the needs of the population. This will be coordinated by a Director for Transportation Access. Critical stakeholders for this will be community residents, local business leaders, the CCPHD, the Fayetteville Area System of Transit Advisory Committee (FAST), the Community Transportation Program and its Transportation Advisory Board (TAB), the Commissioners of Cumberland County, the Fayetteville City Council, the NC Department of Transportation (NCDOT) and NC government leaders.

Our engagement plan for the Mobile Food Market (MFM) will focus on the need and the opportunity to bring food (especially produce and high-quality foods) to food insecure populations in CC. This will reduce a barrier created by lack of transportation for obtaining food for these individuals. Stakeholders for the mobile food market include residents of CC, CCPHD, CCDSS, FCEDC, government leaders, business leaders, retailers, local food producers, farmers markets, faith and civic members and philanthropy organizations. The program will be a not-for-profit organization (the ACC) involved in retail sales sharing revenues with key partners who supply product for the market. Engagement Measures are noted in Table 11.

Community-wide surveys and meetings:

We will engage community residents and business leaders with surveys and through community wide meetings. The initial outreach will be a survey mailed to community residents

with the option to give input through return mail, online survey and community wide meetings. We will gather information and develop consensus on the needs to direct policy and program. These will be repeated after 6 months and then yearly to review progress and identify any changing needs. The main focus is gaining understanding of the needs of the stakeholders and to brainstorm on their needs and wants. Tools for this group will be for brainstorming.

Leadership Groups:

An advisory group for transportation policy will be formed from interested stakeholders led by the director for Transportation Access. It will include a member from the public, a business community leader, a member of the CCPHD, FAST, TAB, County Commission, Fayette City Council. Representation from NCDOT and the NC Legislature will be sought as needed. This will be a powerful group with significant aligned interest but much potential for disagreement. Reports from this group will have the credibility to influence policy makers. Tools for this group will be smart goals, 6 thinking hats, influence and interest grid.

The leadership group responsible for the mobile market will rest with its Board of Directors. Interested stakeholders will have opportunity to participate in meetings and provide feedback. Key stakeholders engaged are CCDSS, local grocery retailers, local farmers, the residents of the county, local businesses, civic and faith organizations and local government leaders. Some of the board members will come from these groups. It will utilize engagement techniques such as the Nominal Group Technique for problem-solving and for setting priorities for ideas generated by stakeholders. (McMillan, 2016). With an adequately diverse board of directors the expectation is that this project will be sensitive to the diverse needs of various stakeholders. Key roles are defined in Table 12.

FAST Advisory Committee and the Community Transportation TAB:

FAST Advisory Committee has meetings monthly. Many of the duties and functions of the Advisory Committee overlap with the mission of the Transportation Access Policy. However, it has other operational needs that are outside transportation access, and it is limited primarily to the city of Fayetteville. The TAB only meets quarterly, and its members are appointed by the County Board of Commissioners. Its function is primarily one of providing advice and assisting in achieving program goals. The goals of the Community Transportation program have significant alignment with the Transportation Access Policy, but the program is limited in a way that does not encompass the entirety of Cumberland County transportation needs. The Transportation Access Director will engage both of these agencies and attend their meetings. This interaction will help break down silos and barriers. Tools used in analysis and engagement will be direct engagement and communication with these leaders.

Government Boards and Agencies:

The Fayetteville City Council and the Cumberland County Board of Commissioners will be the most important governmental members for implementing and adopting policy for Transportation Access. They have governance over this program but will comply with NCDOT and state government rules. Communication and collaboration with them will be crucial for the Transportation Access program to succeed. The Transportation Access Director and Advisory Group must communicate clear vision and present valid and helpful information for the Return on Investment for this policy implementation. Additional engagement with NC State government leaders and the NCDOT will be required to ensure continued and enhanced funding if needed from the state. This involves direct lobbying and will require personal and social connections to bring positive priorities to this powerful group.

Key Community Leadership:

The Transportation Access Director and the Advisory Group will engage key nonelected leaders from education, business, economic development, civic agencies, medical services, philanthropy, and faith to inform them about issues of transportation access. The purpose will be to educate and hope to gain support and develop champions to participate the structured bodies that set transportation policy.

The leaders and stakeholders for the Mobile Market will also be working with and soliciting similar community leaders from education, business, economic development, civic and faith agencies and philanthropy. They will share ideas about equity and social justice. This work is relational. It is engagement that requires time and must be genuine. That kind of relationship building provides the most stable and constant dialogue where stakeholders are free to express concerns but also give opportunity to be influenced in a positive way that makes them comfortable being champions of the program.

Accountability Plan/MOU:

The key agency for accountability will be the CCDSS with a Memorandum of Understanding (MOU) between the ACC and CCDSS. (Appendix I). Responsibilities are outlined in Table 12.

Mission and Vision:

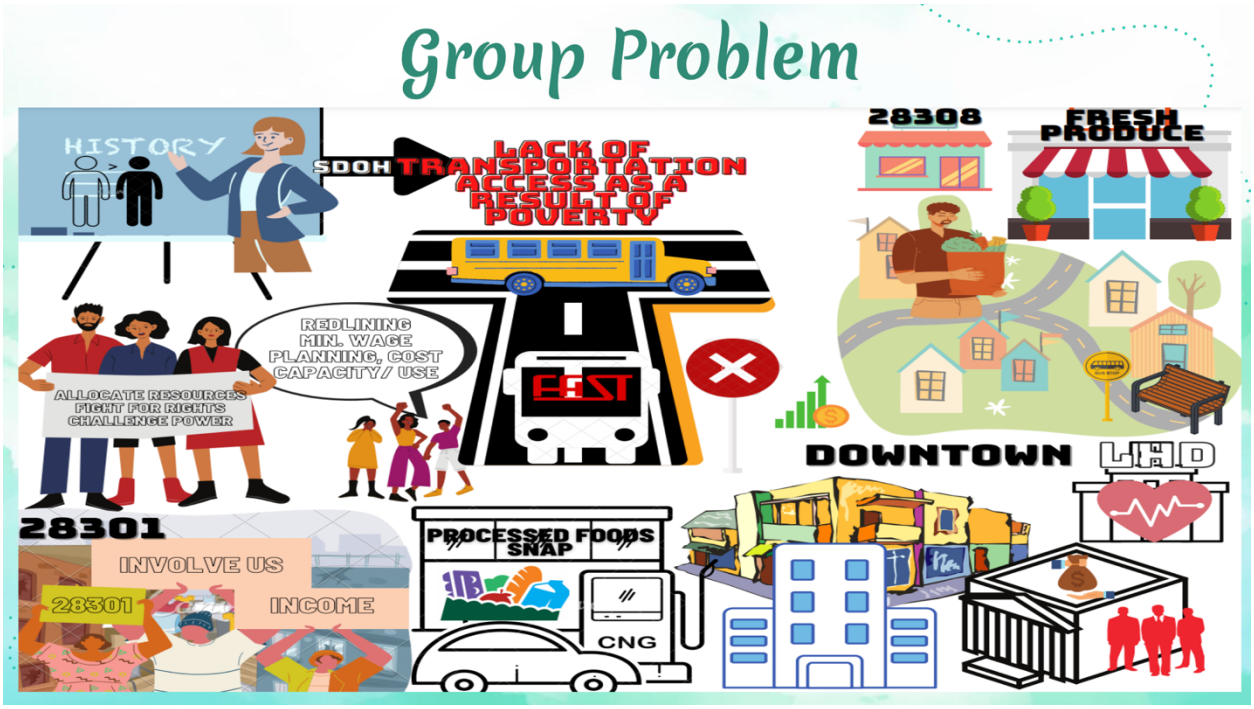
The Mission and Vision for the MFM is to reduce the transportation barrier for food security by providing a Mobile Food Market that will deliver food to food insecure residents.

Persuasive Pitch Presentation

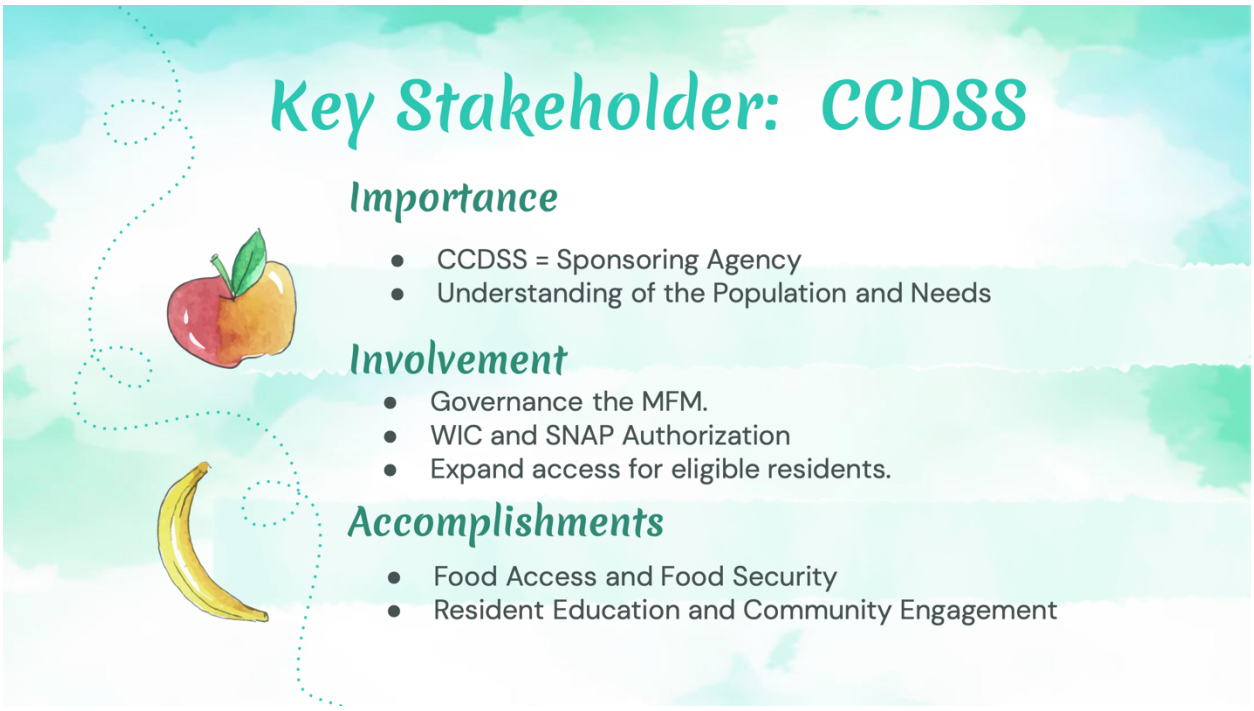
Thanks for hearing about our ACC. We are Group 2: All in the Neighborhood.

Our SDOH is Neighborhood and built environment. We have particular focus on transportation access and barriers which contribute to food insecurity in CC. Our Leadership and Nutrition team are focused on this area of need.

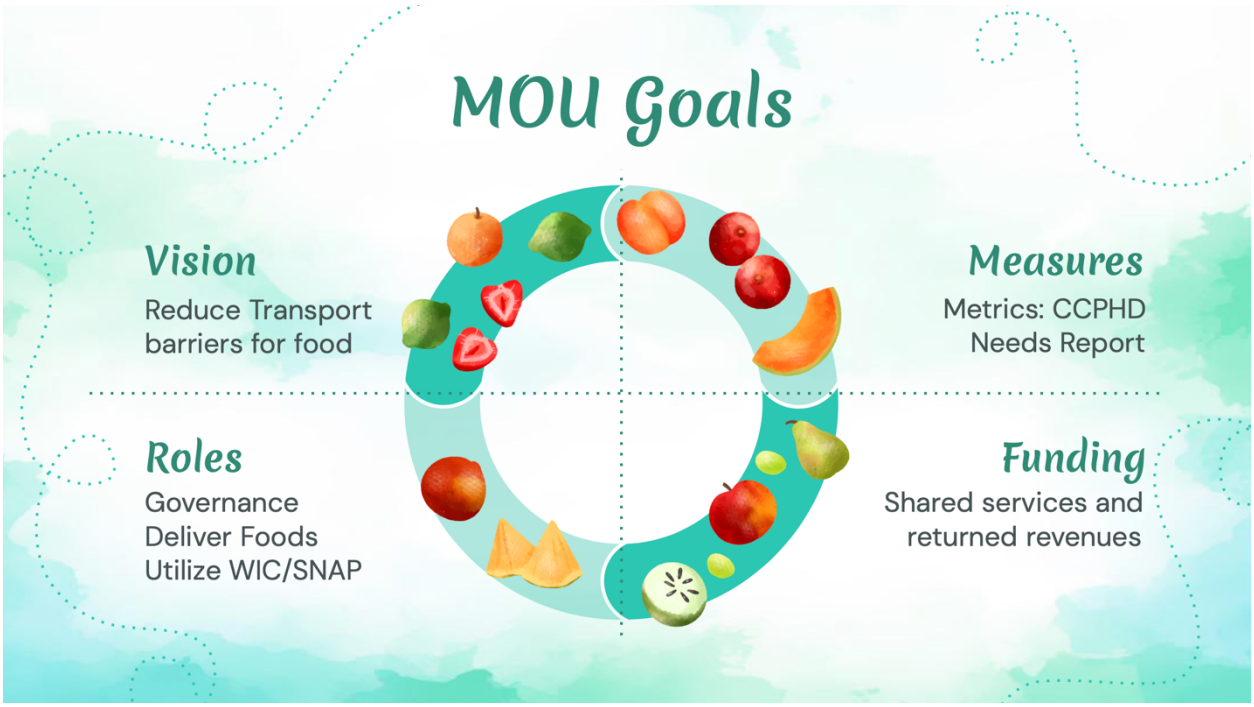
Neighborhood has significant impact on health (Healthy People 2030). These are the elements of Neighborhood and Built Environment (KFF). And zip code is a more important predictor of life expectancy than your genetic code (Dwyer-Lindgren, 2017). Cumberland County has a life expectancy 1.8 years less than that of the state of NC (NC State Center for Health Statistics). Food insecurity is particularly high in CC as noted in this 2019 report from the NC County Commissioners.



Our group problem addresses Transportation Access which impacts the population's ability to get to critical services (work, medical, grocery, etc). We are concerned about this impact on food security for many of the residents—particularly those that are in a food desert, food swamp or both.



Key Stakeholder. CCDSS will be the key sponsoring agency for the MFM. MOU will be authorized by Brenda Jackson, Director of CCDSS. CCDSS will have participation and oversight of MFM with board representation and shared services. MFM will utilize WIC and SNAP benefits authorized by CCDSS and will give enrollment services for eligible residents.



The vision for the MFM is food security by reducing the transportation barrier. By partnering with CCDSS it can optimize the social service mission of providing food access to people who are eligible for nutrition support. Cost efficiencies with shared services can be beneficial to both agencies. And the MFM can utilize revenue for sustainability.

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Individual Appendix H:

Table 7: Demographics and Statistics for Cumberland County Population

	CC	State	Reference
African American	39%	22%	Green 2020
Hispanic	11.9%	9.6%	Green 2020
American Indian	1.8%	1.6%	Green 2020
Two or more races	4.8	2.3%	Green 2020
Poverty	17%	11.8%	Green 2020
Children in Poverty	25%	21%	RWJ
Native American Poverty	29.8%		Green 2020
Workers in Poverty	37.8%		Green 2020
Housing Stress	46.9%		Green 2020
Severe Housing Stress	16%	9%	RWJ
Food Insecurity	28%		2019 County Map Book
Vehicle and pedestrian accidents	94.5/100K	68.2/100K	Green 2020
Vehicle and bicycle accidents	339.4/100K	210.7/100K	Green 2020
Lack of access to a vehicle	6.5%		Green 2020
Air pollution (particulate pollution)	10.6 mcg/M^3	9.8 mcg/M^3	RWJ
Poor or fair health	22%	12%	RWJ
Premature death	9200	7600	RWJ
Violent Crime	548/100K	351/100K	RWJ

Figure 3: Median Household Income by Zip Code (American Community Survey, 2012-2016)*

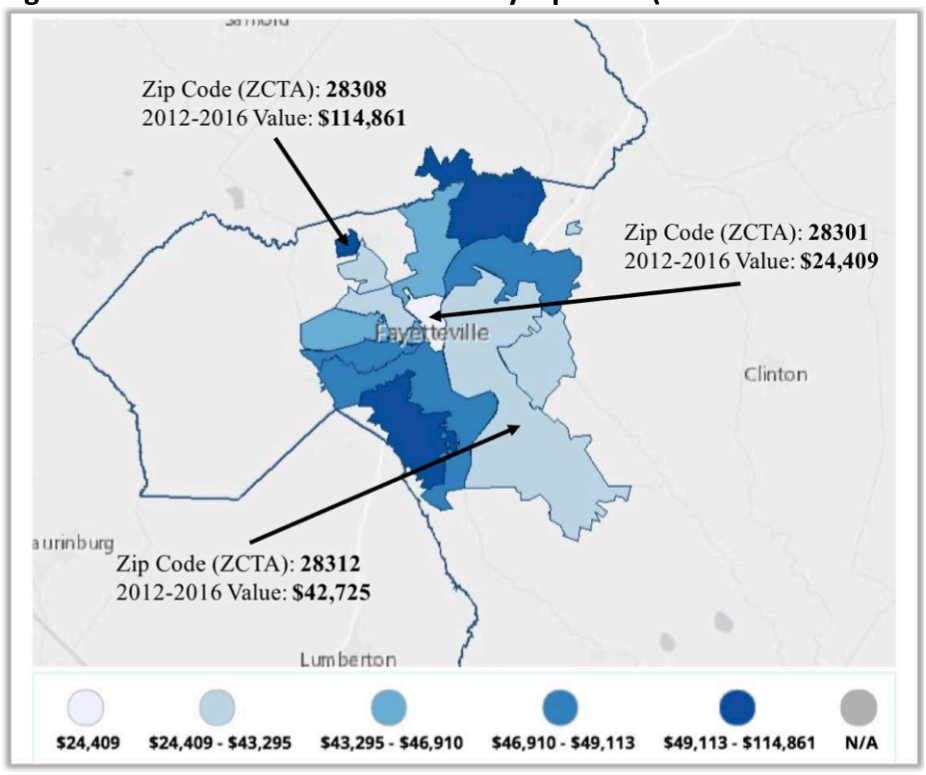

*Image From 2019 Community Health Needs Assessment

Rich Picture—see Appendix A: Group Deliverables, Figure 1

Table 8: INFLUENCE AND INTEREST

Influence and Interest Grid for Transportation Policy

Interest/Influence	Low Influence	High Influence
High Interest	Population in need of transportation CCPHD FCEDC	FAST TAB NCDOT
Lower Interest	Population without need of transportation	State Government Officials Local Government Officials Local Business Leaders Faith Community Civic Organizations Philanthropy

Influence and interest Grid for Mobile Market Program

Interest/Influence	Low Influence	High Influence
High Interest	Population in need of food access CCDPHD FCEDC	Grocery Retailers Local Food Producers Farmers Markets CCDSS
Lower Interest	Population without need of food access	State Government Officials Local Government Officials Local Business Leaders Faith Community Civic Organizations Philanthropy Pathways for Prosperity News Media

Table 9: CATWOE Analysis

CATWOE Analysis: Public in Need of Transportation Action

CATWOE Step	Non-Emergency Transportation Access
Transformation	To enhance transportation access for disadvantaged populations
World View	Public Transportation is inadequate to meet the needs of disadvantaged populations
Customers	Current and Future Public Transportation Users
Actors	Transportation Agencies and Leaders
Owners	Local Governments, NCDOT, State Transportation Leaders (NC House and Senate Transportation Committees)
Environment	Businesses, Public Perception, Taxpayers

Community residents: CATWOE and ROOT Definition. To improve transportation access to critical services (food, medical, employment, etc) through the aggressive enhancements of transportation access at an affordable (or reduced) cost in order to promote better economics, health and nutrition for the population.

Table 10: Give-Get Grid

Contributions	Benefits
What Grocery Retailers will "give" to partnership. • Reduced sales in primary locations • Lost volumes • Reduced revenue/profit at primary locations *What Grocery retailers expect to contribute* • Produce to Mobile market • Participation in mobile commerce	What Grocery Retailers will "get" from partnership. • New outlet for sales • New customers • Revenue from mobile sales *How Grocery Retailers expect to benefit* • Mobile sales/profits • Increased access to remote customers • Brand identity/Advertising
What mobile market will "give" to partnership. • Sales for retail product through the mobile market • New customer access • Profit sharing to Grocery Retailer *What mobile market expect to contribute* • Brand identity for Grocery Products • Advertising of Partnership • Sharing of profits	What mobile market will "get" from partnership • Access to Grocery Products • Commission from sales • WIC/SNAP participation from retail establishments *How mobile market expect to benefit* • Stable supply of Grocery Products • Overall profit from global sales

Table 11: Methods of Engagement

Method of Engagement	Stakeholders	Input on…	Involvement
(5) Community-wide (survey and open meetings)	Residents and business community	• Needs • Brainstorm Ideas	Every 6-12 months
(6) Transportation Advisory Group	Public leaders and local Transportation boards	• Community needs • Assessment of resources and feasibility of proposed strategies • Partnering across boundaries • Messaging and outreach	Re-occurring meetings (ongoing) 1:1 Meeting with Access Director and Board Members between board meetings
(7) Lobbying	City council County commission State Govt. Leaders NCDOT	• Continuous dialogue on the needs and opportunities for increased Transportation Access and develop collaborative strategies for partnerships	Every Council and Commissioners meeting. 1:1 between meetings. As needed meetings with state leaders but check in and updates every 6 months. Policy Brief at key points
(8) Key community leaders	Diverse group of influential community residents	• Messaging the needs and opportunities • Criteria for prioritizing strategies • Align political will	Meetings will be 1:1 but may also include public presentations at civic and other public meetings.

Table 12: RASCI Stakeholder Matrix for Mobile Market Program Intervention

RASCI Levels		
Who is…	**Program** Transformation	Rational for Partner Participation
Responsible = owns the problem/project	The Accountable Care Coalition (ACC) Leadership Group CC Dept Social Services (CCDSS) Local farm producers Grocery Retailers	The ACC Leadership Group will be the entity that is responsible for the Mobile Market. CCDSS will have partnership with WIC and SNAP and advancing access to social services through the mobile market. Local farm producers and Grocery Retailers will have partnership opportunities and retail sales through the mobile market that can be beneficial to them and the other stakeholders.
Accountable = ultimately answerable for the correct and thorough completion of the deliverable or task, and the one who delegates the work to those *responsible*	ACC Leadership CCDSS	ACC Leadership will own the program. They will oversee the employed individuals who actually implement and provide the mobile market. CCDSS will be delegating social service utilization and enrollment to the partners within the mobile market.
Supportive = can provide resources or can play a supporting role in implementation	City and County Government Philanthropy FCEDC Health Department Pathways for Prosperity Coalition	Local government can provide support and potential funding. FCEDC can support politically and may provide grant for development. Philanthropy and Civic organizations can support with funds or volunteers. The Health Department can provide key data and document the need and success of the market. Pathways is broad existing coalition well engaged in the community and socially conscious.
Consulted = has information and/or capability necessary to complete the work	Faith Community Local Residents	The faith community can provide key supporting information on food access and may even be utilized to help provide mobile market locations on their campuses. Public education to ensure demand and support will be needed or it will not be successful.
Informed=must be notified of results, process, and methods, but need not be consulted	State Governments News media Public	News media must be informed and happy to report on the market to avoid communication gaps.

Appendix I: MOU between ACC and CCDSS

Purpose:

This MOU will outline the activities to be delivered, partner specific responsibilities, mutual responsibilities, effective dates of agreement, terms and conditions of the agreement, assessment metrics and evaluation methods.

The above goals will be accomplished by undertaking the following activities:

Cumberland County Department of Social Services (CCDSS)

1) CCDSS will serve as the backbone agency responsible for the Mobile Food Market. The CCDSS will communicate with the ACC on a quarterly basis to ensure alignment of goals and provide feedback.
2) CCDSS will provide funding through WIC and SNAP support for retail sales and provide additional funding for mobile market activities that provide DSS related services to residents served by the mobile market. Addition funding may be provided as needs and opportunities arise for addressing food insecurity or other SDOH needs for these residents.
3) CCDSS with the Cumberland County Public Health Department (CCPHD) will monitor food insecurity and health metrics (obesity and diabetes) and publish in the County Needs Assessments biannually.
4) CCDSS and the ACC will meet quarterly to review the program to review effectiveness and explore opportunities for improvement and enhancement of the Mobile Market.

ACC: Mobile Market of Cumberland County

1) ACC will have a governing board which must include one representative from CCDSS, one representative appointed by the Fayetteville City Council, and one appointed by the

Cumberland County Commission. An additional 4 members of the board will come from two at large members from the community (preference will be given to local farm producer), one member of the retail business community, and one member from Partnership for Prosperity. It will seek to have a larger volunteer advisory board from the community. It will communicate with DSS at least quarterly.

2) ACC will actively communicate and inform local government agencies of the program developments and activities.
3) ACC will obtain initial funding via its originating grant. It will seek additional funding from FCEDC, philanthropy (Community foundation), and utilize revenue from retail sales and contracted services for ongoing operations. It will give monthly financial reports to CCDSS.
4) ACC will hire staff and purchase, or lease equipment needed to perform core activities of the Mobile market.
5) ACC will provide mobile market services to food insecure neighborhoods that will be identified through ongoing community assessments and which are chosen by the ACC Board of Directors with further input by CCDSS.
6) ACC will participate in WIC and SNAP. In addition, it will offer mobile services to help advance enrollment and renewal of DSS services to eligible residents. It will comply with DSS regulations in the processing of social service benefit applications.
7) ACC will have additional MOUs with other stakeholders critical to its mission. This is to include business partners (grocery retailers), farmers, and neighborhood entities (local entities where the market will come to do business (predominantly neighborhood churches).

Duration:

This MOU is at-will and may be modified by mutual consent of both agencies.

It will become effective upon signature by the authorized officers of CCDSS and ACC. It will remain in effect until June 30, 2024 but may be renewed or terminated by mutual consent of both agencies.

Contact Information
Cumberland County Department of Social Services
Breda Jackson, Director
1225 Ramsey Street
Fayetteville, NC 28301
910-323-1540

ACC: Mobile Market of Cumberland County
C. L. Green
Board Chair, Cumberland County Mobile Food Market
Fayetteville, NC 28303

_____Date: 6/30/2021
(Brenda Jackson, Director for CCDSS)

_____Date: 6/30/2021
(C. L Green, Chairman, CCMFM)